

Absolute Magnitude

& Aboriginal Science Fiction

Summer 2003

Ben
Bova

Chris
Bunch

Allen M.
Steele

Jamie
Wild

Bronwyn
Elko

Robert
Metzger

Tenth Issue #20
Anniversary Issue

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Editorial Notes by Warren Lapine

$$M = m + 5 + 5 \log p$$

It seems kind of incredible to me that it's been ten years since DNA Publications published the first issue of its first magazine. Wasn't it only yesterday that DNA publications announced it would soon be publishing its first magazine? The title was to be *Harsh Mistress*, in tribute to Heinlein and *Moby Dick*.

When I sat down to write this I imagined it would take be about two-thousand words. I was stunned when it came in at over eight-thousand words. In the interest of brevity I'd left out so much information and yet my account of the last ten years was still four times as long as the space I'd allocated for it. If you'd like to read the longer version of this we've posted it at www.dnapublications.com

I met Kevin Rogers and Tim Ballou in 1992 and began work on a science fiction magazine. Were all life long readers of genre fiction and we thought it would be an interesting experience to publish a small press magazine. Coming from a rock'n'roll back ground, I realized the importance of promotions and I immediately looked for ways to promote our fledgling magazine. That was when I discovered SF conventions and fandom. The three of us went to NJAC (Not Just Another Con) and talked about our soon-to-be-released biannual magazine. There we met real magazine publishers who offered us a great deal of advice. We paid close attention to what they had to say about the publishing world. The entire experience seemed to energize the three of us and we pushed on with even more determination.

Our first issue of *Harsh Mistress* the Spring/Summer 993 issue. We sent the magazine out to a number of dis-

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Science Fiction

PUBLISHER/EDITOR IN CHIEF/ART DIRECTOR
Warren Lapine

ASSISTANT PUBLISHER
Angela Kessler

PUBLISHING ASSISTANT
John Perreault

CONTRIBUTING EDITORS
Allen Steele
Ian Randal Strock

ASSOCIATE EDITORS
Mike Allen
Mike Jones
Catherine A. Reniere

ADAPTIVE TECHNOLOGIES
Joe Lazzaro

DESIGN
Warren Lapine/Angela Kessler

LAYOUT
Eclipse Studios
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Science Fiction

Fall 2003

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Monster Slayer

by Ben Bova

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This is the way the legend began.

He was called Harry Twelvetoers because, like all the men in his family, he was born with six toes on each foot. The white doctor who worked at the clinic on the reservation said the extra toes should be removed right away, so his parents allowed the whites to cut the toes off, even though his great-uncle Mountain Eagle pointed out that Harry's father, and his father's fathers as far back as anyone could remember, had gone through life perfectly well with twelve toes on their feet.

His secret tribal name, of course, was something that no white was ever told. Even in his wildest drunken sprees Harry never spoke it. The truth is, he was embarrassed by it. For the family had named him Monster Slayer, heavy burden to lay across the shoulders of a little boy, or even the strong young man he grew up to be.

On the day that the white laws said he was old enough to take a job, his great-uncle Mountain Eagle told him to leave the reservation and seek his path in the world beyond.

"Why should I leave?" Harry asked his great-uncle.

Mountain Eagle closed his sad eyes for a moment, then said to Harry, "Look around you, nephew."

Harry looked and saw the tribal lands as he had always seen them, brown desert dotted with mesquite and cactus, steep bluffs worn and furrowed as great-uncle's face, turquoise blue sky and blazing Father Sun baking the land. Yet there was no denying that the land was changing. Off in the distance stood the green fields of the new farms and the tiny dark shapes of the square houses the whites were building. And there were gray rain clouds rising over the mountains.

Refugees were pouring into the high desert. The greenhouse warming that gutted the farms of the whites with drought also brought rains that were filling the dry arroyos of the tribal lands. The desert would be gone one day, the white scientists predicted, turned green and bountiful. So the whites were moving into the reservation.

"This land has been ours since the time of First Man and First Woman," great-uncle said. "But now the whites are swarming in. There is no stopping them. Soon there will be no place of our own left to us. Go. Find your way in the world beyond. It is your destiny."

Reluctantly, Harry left the reservation and his family.

In the noisy, hurried world of the whites jobs were easy to find, but good jobs were not. With so many cities flooded by the greenhouse warming, they were frantically building new housing, whole new villages and towns. Harry got a job with a construction firm in Colorado, where the government was putting up huge tracts of developments for the hordes of refugees from the drowned coastal cities. He started as a lowly laborer, but soon enough worked himself up to a pretty handy worker, a jack of all trades.

He drank most of his pay, although he always sent some of it back to his parents.

One cold, blustery morning, when Harry's head was thundering so badly from a hangover that even the icy wind felt good to him, his supervisor called him over to her heated hut.

"You're gonna kill yourself with this drinking, Harry," said the supervisor, not unkindly.

Harry said nothing. He simply looked past the supervisor's ear at the calendar tacked to the corkboard. The picture showed San Francisco the way it looked before the floods and the rioting.

"You listening to me?" the supervisor asked, more sharply. "This morning you nearly ran the backhoe into the excavation pit, for

chrissake."

"I stopped in plenty time," Harry mumbled.

The supervisor just shook her head and told Harry to get back to work. Harry knew from the hard expression on the woman's face that his days with this crew were numbered.

Sure enough, at the shape-up a few mornings later the super took Harry aside and said, "Harry, you Indians have a reputation for being good at high steel work."

Harry's head was thundering again. He drank as much as any two men, but he had enough pride to show up on the job no matter how bad he felt. Can't stay monsters laying in bed, he would tell himself, forcing himself to his feet and out to work. Besides, no work, no money. And no money, no beer. No whisky. No girls who danced on your lap or stripped off their clothes to the rhythm of synthesizer music.

Harry knew that it was the Mohawks back East who were once famous for their steelwork on skyscrapers, but he said nothing to the supervisor except, "That's what I heard, too."

"Must be in your blood, huh?" said the super, squinting at Harry from under her hard hat.

Harry nodded, even though it made his head feel as if some old medicine man was inside there thumping on a drum.

"I got a cousin who needs high steel workers," the super told him. "Over in Greater Denver. He's willing to train newbies. Interested?"

Harry shuffled his feet a little. It was really cold, this early in the morning.

"Well?" the super demanded. "You interested or not?"

"I guess I'm interested," Harry said. It was better than getting fired outright.

As he left the construction site, with the name and number of the super's cousin in his cold-numbed fist, he could hear a few of the other workers snickering.

"There goes old Twelvetoers."

"He'll need all twelve to hold onto those girders up in the wind."

They started making bets on how soon Harry would kill himself.

But Harry became a very good high steel worker, scrambling along the steel girders that formed the skeletons of the new high-rise towers. He cut down on the drinking: alcohol and altitude didn't mix. He traveled from Greater Denver to Las Vegas and all the way down to Texas, where the Gulf of Mexico had swallowed up Galveston and half of Houston.

When he'd been a little boy, his great-uncle had often told Harry that he was destined to do great things. "What great things?" Harry would ask. "You'll see," his great-uncle would say. "You'll know when you find it."

"But what is it?" Harry would insist. "What great things will I do?"

Mountain Eagle replied, "Every man has his own right path, Harry. When you find yours, your life will be in harmony and you'll achieve greatness."

Before he left his childhood home to find his way in the world, his great-uncle gave him a totem, a tiny black carving of a spider.

"The spider has wisdom," he told Harry. "Listen to the wisdom of the spider whenever you have a problem."

Harry shrugged and stuffed the little piece of obsidian into the pocket of his jeans. Then he took the bus that led out of the reservation.

As a grown, hard-fisted man, Harry hardly ever thought of those silly ideas. He didn't have time to think about them when he was

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working fifty, sixty, seventy stories high with nothing between him and the ground except thin air that blew in gusts strong enough to knock a man off his feet if he wasn't careful.

He didn't think about his great-uncle's prophecy when he went roaring through the bars and girlie joints over weekends. He didn't think about anything when he got so drunk that he fell down and slept like a dead man.

But he kept the spider totem. More than once his pockets had been emptied while he slept in a drunken stupor, but no one ever took the spider from him.

And sometimes the spider did speak to him. It usually happened when he was good and drunk. In a thin, scratchy voice the spider would say, "No more drinking tonight, Harry. You've had enough. Sleep all through tomorrow, be ready for work on Monday."

Most of the time he listened to the totem's whispers. Sometimes he didn't, and those times almost always worked out badly. Like the time in New Houston when three Japanese engineers beat the hell out of him in the alley behind the cat house. They didn't rob him, though. And when Harry came to, in a mess of his own blood and vomit and garbage, the spider was wise enough to refrain from saying, "I told you not to get them angry."

He bounced from job to job, always learning new tricks of the trades, never finding the true path that would bring him peace and harmony. The days blurred into an unending sameness: crawl out of bed, clamber along the girders of a new highrise, wait for the end of the week. The nights were a blur, too: beer, booze, women he hardly ever saw more than once.

Now and then Harry wondered where he was going. "There's more to life than this," the spider whispered to him in his sleep. "Yeah, sure," Harry whispered back. "But what? How do I find it?"

One night, while Harry was working on the big Atlanta Renewal Project, the high steel crew threw a going-away party for Jesse Ali, the best welder in the gang.

"So where's Jesse going?" Harry asked a buddy, beer in hand.

The buddy took a swig of his own beer, then laughed. "He's got a good job, Harry. Great job. It's out of this world." Then he laughed as if he'd made a joke.

"But where is it? Are they hiring?"

"Go ask him," the buddy said.

Harry wormed his way through the gang clustered at the bar and finally made it to Jesse's side.

"Gonna miss you, Jess," he said. Shouted, actually, over the noise of the raucous crowd.

Ali smiled brightly. "Christ, Harry, that's the longest sentence you ever said to me, man."

Harry looked down at the steel-tipped toes of his brogans. He had never been much for conversation, and his curiosity about Jesse's new job was butting its head against his natural reticence. But the spider in his pocket whispered, "Ask him. Don't be afraid. Ask him."

Harry summoned up his courage. "Where you goin'?"

Ali's grin got wider. He pointed a long skinny finger straight up in the air.

Harry said nothing, but the puzzlement must have shown clearly on his face.

"In space, man," Ali explained. "They're building a great big habi-

tat in orbit. Miles long. It'll take years to finish. I'll be able to retire by the time the job's done."

Harry digested that information. "It'll take that long?"

The black man laughed. "Naw. But the pay's that good."

"They lookin' for people?"

With a nod, Ali said, "Yeah. You hafta go through a couple months training first. Half pay."

"Okay."

"No beer up there, Harry. No gravity, either. I don't think you'd like it."

"Maybe," said Harry.

"No bars. No strip joints."

"They got women, though, don't they?"

"Like Yablonski," said Ali, naming one of the crew who was tougher than any two of the guys.

Harry nodded. "I seen worse."

Ali threw his head back and roared with laughter. Harry drifted away, had a few more beers, then walked slowly through the magnolia-scented evening back to the barracks where most of the construction crew was housed.

Before he drifted to sleep the spider urged him, "Go apply for the job. What do you have to lose?"

It was tough, every step of the way. The woman behind the desk where Harry applied for a position with the space construction outfit clearly didn't like him. She frowned at him and she scowled at her computer screen when his dossier came up. But she passed him on to a man who sat in a private cubicle and had pictures of his wife and kids pinned to the partitions.

"We are an equal opportunity employer," he said, with a brittle smile on his face.

Then he waited for Harry to say something. But Harry didn't know what he should say, so he remained silent.

The man's smile faded. "You'll be living for months at a time in zero gravity, you know," he said. "It affects your bones, your heart. You might not be fit to work again when you return to Earth."

Harry just shrugged, thinking that these whites were trying to scare him.

They put him through a whole day of physical examinations. Then two days of tests. Not like tests in school; they were interested in his physical stamina and his knowledge of welding and construction techniques.

They hired Harry, after warning him that he had to endure two months of training at half the pay he would start making if he finished the training okay. Half pay was still a little more than Harry was making on the Atlanta Renewal Project. He signed on the dotted line.

So Harry flew to Hunstville, Alabama, in a company tiltrotor plane. They gave him a private room, all to himself, in a seedy-looking six-story apartment building on the edge of what had once been a big base for the space agency, before the government sold it off to private interests.

His training was intense. Like being in the army, almost, although all Harry knew about being in the army was what he'd heard from other construction workers. The deal was, they told you something once. You either got it or you flunked out. No second chances.

"Up there in orbit," the instructors would hammer home, time and



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again, "there won't be a second chance. You screw up, you're dead. And probably a lot of other people get killed, too."

Harry began to understand why there was no beer up there. Nor was there any at the training center. He missed it, missed the comfort of a night out with the gang, missed the laughs and the eventual oblivion where nobody could bother him and everything was dark and quiet and peaceful and even the spider kept silent.

The first time they put him in the water tank Harry nearly freaked. It was *deep*, like maybe as deep as his apartment building was high. He was zipped into a white spacesuit, like a mummy with a bubble helmet on top, and there were three or four guys swimming around him in trunks and scuba gear. But to a man who grew up in the desert, this much water was scary.

"We use the buoyancy tank to simulate the microgravity you'll experience in orbit," the instructor told the class. "You will practice construction techniques in the tank."

As he sank into the water for the first time, almost petrified with fear, the spider told Harry, "This is an ordeal you must pass. Be brave. Show no fear."

For days on end Harry suited up and sank into the deep, clear water to work on make-believe pieces of the structure he'd be building up in space. Each day started with fear, but he battled against it and tried to do the work they wanted him to do. The fear never went away, but Harry completed every task they gave him.

When his two months of training ended, the man in charge of the operation called Harry into his office. He was an Asian of some sort; Chinese, Japanese, maybe Korean.

"To tell you the truth, Harry," he said, "I didn't think you'd make it. You have a reputation for being a carouser, you know."

Harry said nothing. The pictures on the man's wall, behind his desk, were all of rockets taking off on pillars of flame and smoke.

The man broke into a reluctant smile. "But you passed every test we threw at you." He got to his feet and stretched his hand out over his desk. "Congratulations, Harry. You're one of us now."

Harry took his proffered hand. He left the office feeling pretty good about himself. He thought about going off the base and finding a nice friendly bar somewhere. But as he dug his hand into his pants pocket and felt the obsidian spider there, he decided against it. That night, as he was drowsing off to sleep, the spider told him, "Now you face the biggest test of all."

Launching off the Earth was like nothing Harry had ever even dreamed of. The Clippership rocket was a squat cone; its shape reminded Harry of a big teepee made of gleaming metal. Inside, the circular passenger compartment was decked out like an airliner's, with six short rows of padded reclining chairs, each of them occupied by a worker riding up to orbit. There was even a pair of flight attendants, one man and one woman.

As he clicked the safety harness over his shoulders and lap, Harry expected they would be blasted off the ground like a bullet fired from a thirty-aught. It wasn't that bad, though in some ways it was worse. The rocket lit off with a roar that rattled Harry deep inside his bones. He felt pressed down into his seat while the land outside the little round window three seats away tilted and then seemed to fly away.

The roaring and rattling wouldn't stop. For the flash of a moment Harry wondered if this was the demon he was supposed to slay, a dragon made of metal and plastic with the fiery breath of its rockets pushing it off the Earth.

And then it all ended. The noise and shaking suddenly cut off and Harry felt his stomach drop away. For an instant Harry felt himself falling, dropping off into nothingness. Then he took a breath and saw that his arms had floated up from the seat's armrests. Zero gee. The instructors always called it microgravity, but to Harry it was zero gee. And it felt good.

At the school they had tried to scare him about zero gee with stories of how you get sick and heave and get so dizzy you can't move your head without feeling like it's going to burst. Harry didn't feel any of that. He felt as if he were floating in the water tank again, but this was better, much better. There wasn't any water. He couldn't help grinning. This is great, he said to himself.

But not everybody felt so good. Looking around, Harry saw plenty of gray faces, even green. Somebody behind him was gagging. Then somebody upchucked. The smell made Harry queasy. Another passenger retched, up front. Then another. It was like a contagious bug, the sound and stench was getting to everyone in the passenger compartment. Harry took the retch bag from the seat pocket in front of him and held it over his mouth and nose. Its cold sterile smell was better than the reek of vomit that was filling the compartment. There was nothing Harry could do about the noise except to tell himself that these were whites who were so weak. He wasn't going to sink to their level.

"You'll get used to it," the male flight attendant said, grinning at them from up at the front of the compartment. "It might take a day or so, but you'll get accustomed to zero gee."

Harry was already accustomed to it. The smell, though, was something else. The flight attendants turned up the air blowers and handed out fresh retch bags, floating through the aisles as if they were swimming in air. Harry noticed they had filters in their nostrils; that's how they handle the stink, he thought.

He couldn't see much of anything as the ship approached the construction site, although he felt the slight thump when they docked. The flight attendants had told everybody to stay in their seats and keep buckled in until they gave the word that it was okay to get up. Harry waited quietly and watched his arms floating a good five centimeters off the armrests of his chair. It took a conscious effort to force them down onto the rests.

When they finally told everybody to get up, Harry clicked the release on his harness and pushed to his feet. And sailed right up into the overhead, banging his head with a thump. Everybody laughed. Harry did too, to hide his embarrassment.

He didn't really see the construction site for three whole days. They shuffled the newcomers through a windowless access tunnel, then down a long sloping corridor and into what looked like a processing center, where clerks checked in each new arrival and assigned them to living quarters. Harry saw that there were no chairs anywhere in sight. Tables and desks were chest-high, and everybody stood up, with their feet in little loops that were fastened to the floor. That's how they keep from banging their heads on the ceiling, Harry figured.

Their living quarters were about the size of anemic telephone booths,



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little more than a closet with a mesh sleeping bag tacked to one wall.

"We sleep standing up?" Harry asked the guy who was showing them the facilities.

The guy smirked at him. "Standing up, on your head, sideways or inside-out. Makes no difference in zero gee."

Harry nodded. I should have known that, he said to himself. They told us about it back at the training base.

Three days of orientation, learning how to move and walk and eat and even crap in zero gee. Harry thought that maybe the bosses were also using the three days to see who got accustomed to zero gee well enough to be allowed to work, and who they'd have to send home.

Harry loved zero gee. He got a kick out of propelling himself down a corridor like a human torpedo, just flicking his fingertips against the walls every few meters as he sailed along. He never got dizzy, never got disoriented. The food tasted pretty bland, but he hadn't come up here for the food. He laughed the first time he sat on the toilet and realized he had to buckle up the seat belt or he'd take off like a slow, lumbering rocket.

He slept okay, except he kept waking up every hour or so. The second day, during the routine medical exam, the doc asked him if he found it uncomfortable to sleep with a head band. Before Harry could answer, though, the doctor said, "Oh, that's right. You're probably used to wearing a head band, aren't you?"

Harry grunted. When he got back to his cubicle he checked out the orientation video on the computer built into the compartment's wall. The headband was to keep your head from nodding back and forth in your sleep. In microgravity, the video explained, blood pumping through the arteries in your neck made your head bob up and down while you slept, unless you attached the headband to the wall. Harry slept through the night from then on.

Their crew supervisor was a pugnacious little Irishman with thinning red hair and fire in his eye. After their three days' orientation, he called the dozen newcomers to a big metal-walled enclosure with a high ceiling ribbed with steel girders. The place looked like an empty airplane hangar to Harry.

"You know many people have killed themselves on this project so far?" he snarled at the assembled newbies.

"Eighteen," he answered his own question. "Eighteen assholes who didn't follow procedures. Dead. One of them took four other guys with him."

Nobody said a word. They just stood in front of the super with their feet secured by floor loops, weaving slightly like long grasses in a gentle breeze.

"You know how many of *my* crew have killed themselves?" he demanded. "None. Zip. Zero. And you know why? I'll tell you. Because I'll rip the lungs out of any jerkoff asshole who goes one millihon of a millimeter off the authorized procedures."

Harry thought the guy was pretty small for such tough talk, but what the hell, he's just trying to scare us.

"There's a right way and a wrong way to do anything," the super went on, his face getting splotchy red. "The right way is what I tell you. Anything else is wrong. Anything! Got that?"

A couple of people replied with "Yes, sir," and "Got it." Most just mumbled. Harry said nothing.

"You," the super snapped, pointing at Harry. "Twelvetoes. You got that?"

"I got it," Harry muttered.

"I didn't hear you."

Harry tapped his temple lightly. "It's all right here, chief."

The supervisor glared at him. Harry stood his ground, quiet and impassive. But inwardly he was asking the spider, "Is this the monster I'm gonna slay?"

The spider did not answer.

"All right," the super said at last. "Time for you rookies to see what you're in for."

He led the twelve of them, bobbing like corks in water, out of the hangar and down a long, narrow, tubular corridor. To Harry it seemed more like a tunnel, except that the floor and curving walls were made of what looked like smooth, polished aluminum. Maybe not. He put out a hand and brushed his fingertips against the surface. Feels more like plastic than metal, Harry thought.

"Okay, stop here," said the super.

Stopping was easier said than done, in zero gee. People bumped into one another and jostled around a bit while the super hovered at the head of the group, hands on hips, and glowered at them. Harry, back near the end of the queue, managed to brush against one of the better-looking women, a Hispanic with big dark eyes and a well-rounded figure.

"Sorry," he muttered to her.

"*Da nada*," she replied, with a smile that might have been shy. Harry read the nametag pinned above her left breast pocket: Marta Santos.

"All right now," the super called to them, tugging a palmcomp from the hip pocket of his coveralls. "Take a look."

He pecked at the handheld, and suddenly the opaque tube became as transparent as glass. Everybody gasped.

They were hanging in the middle of a gigantic spiderwork of curving metal girders, like being inside a dirigible's frame, except that the girders went on and on for miles. And beyond it Harry saw the immense curving bulk of Earth, deep blue gleaning ocean, brighter than the purest turquoise. And streams of clouds so white it hurt his eyes to look at them. He blinked, then looked again. He saw long rows of waves flowing across the ocean, and the cloud-etched edge of land, with gray wrinkles of mountains off in the distance. Beyond the flank of the curving world and its thin glowing skin of air was the utterly black emptiness of space.

We're in space! Harry realized. He had known it, in his head, but now he felt it in his guts, where reality lived. I'm in space, he said to himself, lost in the wonder of it. I'm no longer on Earth.

Abruptly the tunnel walls went opaque again. The view shut off. An audible sigh of disappointment gusted through the crew.

"That's enough for now," the super said, with a grin that was somewhere between smug and nasty. "Tomorrow you clowns go out there and start earning your pay."

Harry licked his lips in anticipation.

The suits were a pain. The one thing they couldn't prepare you for on Earth was working inside the goddamned spacesuits. Not even the water tank could simulate the zero pressure of vacuum. The suit's torso, arms and leggings were hard-shell cermet, but the joints and the gloves had to be flexible, which meant they were made of fabric, which meant they ballooned and got stiff, tough to flex and move when you went outside. The gloves were especially stubborn. They had tiny little servomotors on the back that were supposed to amplify your natural muscle power and help you move the fingers. Sometimes that helped, but when it came to handling tools it was mostly a waste of time.

Harry got used to the clunky gloves, and the new-car smell of his suit. He never quite got used to hanging in the middle of nothing, surrounded by the growing framework of the miles-long habitat with the huge and glowing Earth spread out before his eyes. Sometimes he thought it was below him, sometimes it seemed as if it was hanging overhead. Either way, Harry could gawk at it like a hungry kid looking through a restaurant window, watching it, fascinated, as it slid past, ever-changing, a whole world passing in panoramic review before his staring eyes.

"Stop your goofin', Twelvetoes, and get back to work!" The super's

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voice grated in Harry's helmet earphones.

Harry grinned sheepishly and nodded inside his helmet. It was awfully easy to get lost in wonder, watching the world turn.

They worked a six-day week. There was no alcohol in the habitat, not even on Sundays. There was a cafeteria, and the crews socialized there. Everybody complained about the soggy sandwiches and bland fruit juices that the food and drink machines dispensed. You didn't have to put money into them; their internal computers docked your pay automatically.

Harry was scanning the menu of available dishes, wishing they'd bring up somebody who knew how to cook with spices, when a woman suggested, "Try the chicken soup. It's not bad."

She introduced herself: Liza Goldman, from the engineering office. She was slightly taller than Harry, on the skinny side, he thought. But she looked pretty when she smiled. Light brown hair piled up on top of her head. She and Harry carried their trays to one of the chest-high tables. Harry took a swig from the squeeze bulb of soup. It was lukewarm.

Goldman chattered away as if they were old friends. At first Harry wondered why she had picked him to share a meal with, but pretty soon he was enjoying her company enough to try to make conversation. It wasn't easy. Small talk was not one of his skills.

"You'd think they'd be able to keep the hot foods hot," Goldman was saying, "and the cold foods cold. Instead, once they're in the dispensers they all go blah. Entropy, I guess."

Harry wrinkled his brow and heard himself ask, "You know what I wonder about?"

"No. What?"

"How come they go: food dispensers and automated systems for life support and computers all over the place, but they still need us construction jocks."

Goldman's brows rose. "To build the habitat. What else?"

"I mean, why don't they have automated machines to do the construction work? Why do we hafta go outside and do it? They could have machines doin' it, couldn't they?"

She smiled at him. "I suppose."

"Like, they have rovers exploring Mars, don't they? All automated. The scientists run them from their station in orbit around Mars, don't they?"

"Teleoperated, yes."

"Then why do they need guys like me up here?"

Goldman gave him a long, thoughtful look. "Because, Harry, you're cheaper than teleoperated equipment."

Harry was surprised. "Cheaper?"

"Sure. You construction people are a lot cheaper than developing teleoperated machinery. And more flexible."

"Not in those damned suits," Harry grumbled.

With an understanding laugh, Goldman said, "Harry, if they spent the money to develop teleoperated equipment, they'd still have to bring people up here to run the machines. And more people to fix them when they break down. You guys are cheaper."

Harry needed to think about that.

Goldman invited him to her quarters. She had an actual room to herself; not a big room, but there was a stand-up desk and a closet with a folding door and a smart screen along one wall and even a sink of her own. Harry saw that her sleeping mesh was pinned to the ceil-

ing. The mesh would stretch enough to accommodate two, he figured.

"What do you miss most, up here?" Goldman asked him.

Without thinking, Harry said, "Beer."

Her eyes went wide with surprise for a moment, then she threw her head back and laughed heartily. Harry realized that he had given her the wrong answer.

She unpinned her hair and it spread out like a fan, floating weightlessly.

"I don't have beer, Harry, but I've got something just as good. Maybe better."

"Yeah?"

Goldman slid back the closet door and unzipped a faux leather bag hanging inside. She glided back to Harry and held out one hand. He saw there were two gelatin capsules in her palm.

"The guys in the chem lab cook this up," she said. "It's better than beer."

Harry hesitated. He was on-shift in the morning.

"No side effects," Goldman coaxed. "No hangover. It's just a recreational compound. There's no law against it."

He looked into her tawny eyes. She was offering a lot more than a high.

Her smile turned slightly malicious. "I thought you Native Americans were into peyote and junk like that."

Thinking he'd rather have a beer, Harry took the capsule and swallowed it. As it turned out, they didn't need the sleeping bag. They floated in the middle of the room, bumping into a wall now and then, but who the hell cared?

*

The next morning Harry felt fine, better than he had in months. He was grinning and humming to himself as he suited up for work.

Then he noticed the super was suiting up, too, a couple of spaces down the bench.

Catching Harry's puzzled look, the super grumbled, "Mitsuo called in sick. I'm goin' out with you."

It was a long, difficult shift, especially with the super dogging him every half-second:

"Be careful with those beams, hotshot! Just 'cause they don't weigh anything doesn't mean they can't squash you like a bug."

Harry nodded inside his helmet and wrestled the big, weightless girder into place so the welders could start on it while the supervisor went into a long harangue about the fact that zero gee didn't erase a girder's mass.

"You let it bang into you and you'll get crushed just like you would down on Earth."

He went on like that for the whole shift. Harry tried to tune him out, wishing he had the powers of meditation that his great-uncle had talked about, back home. But it was impossible to escape the super's screechy voice yammering in his helmet earphones. Little by little, though, Harry began to realize that the super was trying to educate him, trying to teach him how to survive in zero gee, giving him tips that the training manuals never mentioned.

Instead of ignoring the little man's insistent voice, Harry started to listen. Hard. The guy knew a lot more about this work than Harry did, and Harry decided he might as well learn if the super was willing to teach.

By the time they went back inside and began to worm themselves

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out of the spacesuits, Harry was grinning broadly.

The super scowled at him. "What's so funny?"

Peeling off his sweat-soaked thermal undergarment, Harry shook his head. "Not funny. Just happy."

"Happy? You sure don't smell happy!"

Harry laughed. "Neither do you, chief."

The super grumbled something too low for Harry to catch.

"Thanks, chief," Harry said.

"For what?"

"For all that stuff you were telling me out there. Thanks."

For once, the supervisor was speechless.

*

Days and weeks blurred into months of endless drudgery. Harry worked six days each week, the monotony of handling the big girders broken only by the never-ending thrill of watching the always-changing Earth sliding along below. Now and then the super would give him another impromptu lecture, but once they were inside again the super never socialized with Harry, nor with any of his crew.

"I don't make friends with the lunks who work for me," he explained gruffly. "I don't want to be your friend. I'm your boss."

Harry thought it over and decided the little guy was right. Most of the others on the crew were counting the days until their contracts were fulfilled and they could go back to Earth and never see the super again. Harry was toying with the idea of signing up for another tour when this one was finished. There was still plenty of work to do on the habitat, and there was talk of other habitats being started.

He spent some of his evenings with Goldman, more of them with the chemists who cooked up the recreational drugs. Goldman had spoken straight: the capsules were better than beer, a great high with no hangovers, no sickness.

He didn't notice that he was actually craving the stuff, at first. Several months went by before Harry realized his insides got jumpy if he went a few days without popping a pill. And the highs seemed flatter. He started taking two at a time and felt better.

Then the morning came when his guts were so fluttery he wondered if he could crawl out of his sleeping bag. His hands shook noticeably. He called in sick.

"Yeah, the same thing happened to me," Goldman said that evening, as they had dinner in her room. "I had to go to the infirmary and get my system cleaned out."

"They do that?" Harry asked, surprised.

She tilted her head slightly. "They're not supposed to. The regulations say they should report drug use, and the user has to be sent back Earthside for treatment."

He looked at her. "But they didn't send you back."

"No," said Goldman. "The guy I went to kept it quiet and treated me off the record."

Harry could tell from the look on her face that the treatment wasn't for free.

"I don't have anything to pay him with," he said.

Goldman said, "That's okay, Harry. I'll pay him. I got you into this shit, I'll help you get off it."

Harry shook his head. "I can't do that."

"I don't mind," she said. "He's not a bad lay."

"I can't do it."

She grasped both his ears and looked at him so closely that their noses touched. "Harry, sooner or later you'll have to do something: It doesn't get better all by itself. Addiction always gets worse."

He shook his head again. "I'll beat it on my own."

He stayed away from the pills for nearly a whole week. By the fifth day, though, his supervisor ordered him to go to the infirmary.

"I'm not going to let you kill yourself out there," the super snarled at him. "Or anybody else, either."

"But they'll send me back Earthside," Harry said. Pleaded, really.

"They ought to shoot you out of a mother-humping cannon," the super growled.

"I'll beat it. Give me a chance."

"The way your hands are shaking? The way your eyes look? You think I'm crazy?"

"Please," Harry begged. It was the hardest word he had ever spoken in his whole life.

The super stared at him, his face splotchy red with anger, his eyes smoldering. At last he said, "You work alone. You kill yourself, that's your problem, but I'm not going to let you kill anybody else."

"Okay," Harry agreed.

"And if you don't start shaping up damned soon, you're finished. Understand?"

"Yeah, but —"

"No buts. You shape up or I'll fire your ass back to Earth so fast they'll hear the sonic boom on Mars."

So Harry got all the solo jobs: setting up packages of tools at the sites where the crew would be working next; hauling emergency tanks of oxygen; plugging in electronics boards in a new section after the crew finished putting it together; spraying heat-reflecting paint on slabs of the habitat's outer skin. He worked slowly, methodically, because his hands were shaking most of the time and his vision went blurry now and then. He fought for control of his own body inside the confines of his spacesuit, which didn't smell like a new car anymore; it smelled of sweat and piss and teeth-gritting agony.

He spent his nights alone, too, in his closet-sized quarters, fighting the need to down a few pills. Just a few. A couple, even; that's all I need. Maybe just one would do it. Just one, for tonight. Just to get me through the night. I'll be banging my head against the wall if I don't get something

to help me.

But the spider would tell him, "Fight the monster, Harry. Nobody said it would be easy. Fight it."

The rest of the crew gave him odd looks in the mornings when he showed up for work. Harry thought it was because he looked so lousy, but finally one of the women asked him why the super was picking on him.

"Pickin' on me?" Harry echoed, truly nonplussed.

"He's giving you all the shit jobs, Twelveroids."

Harry couldn't explain it to her. "I don't mind," he said, trying to make it sound cheerful.

She shook her head. "You're the only Native American on the crew and you're being kept separate from the rest of us, every shift. You should complain to the committee —"

"I got no complaints," Harry said firmly.



Monster Slayer

"Then I'll bring it up," she flared.

"Don't do me any favors."

After that he was truly isolated. None of the crew would talk to him. They think I'm a coward, Harry said to himself. They think I'm letting the super shit on me.

He accepted their disdain. I've earned it, I guess, he told the spider. The spider agreed.

When the accident happened, Harry was literally a mile away. The crew was working on the habitat's endcap assembly, where the curving girders came together and had to be welded precisely in place. The supervisor had Harry installing the big, thin, flexible sheets of honeycomb metal that served as a protective shield against micrometeoroid hits. Thin as they were, the bumpers would still absorb the impact of a pebble-sized meteoroid and keep it from puncturing the habitat's skin.

Harry heard yelling in his helmet earphones, then a high-pitched scream. He spun himself around and pushed off as far as his tether would allow. Nothing seemed amiss as far as he could see along the immense curving flank of the habitat. But voices were hollering on the intercom frequency, several at the same time.

Suddenly the earphones went dead silent. Then the controller's voice, pitched high with tension: "EMERGENCY. THIS IS AN EMERGENCY. ALL OUTSIDE PERSONNEL PROCEED TO ENDCAP IMMEDIATELY. REPEAT. EMERGENCY AT ENDCAP."

The endcap, Harry knew, was where the rest of the crew was working.

Without hesitation, without even thinking about it, Harry pulled himself along his tether until he was at the cleat where it was fastened. He unclipped it and started dashing along the habitat's skin, flicking his gloved fingers from one handhold to the next, his legs stretched out behind him, batwing along the curving flank of the massive structure like a silver barracuda.

Voices erupted in his earphones again, but after a few seconds somebody inside cut off the intercom frequency. Probably the controller, Harry thought. As he flew along he stabbed at the keyboard on the wrist of his suit to switch to the crew's exclusive frequency. The super warned them never to use that frequency unless he told them to, but this was an emergency.

Sure enough, he heard the super's voice rasping, "I'm suiting up; I'll be out there in a few minutes. By the numbers, report in."

As he listened to the others counting off, the shakes suddenly turned Harry's insides to burning acid. He fought back the urge to retch, squeezed his eyes tight shut, clamped his teeth together so hard his jaws hurt. His bowels ruptured. Don't let me crap in the suit! he prayed. He missed a handhold and nearly soared out of reach of the next one, but he righted himself and kept racing toward the scene of the accident, whatever it was, blind with pain and fear. When his turn on the roll call came he gasped out, "Twelvetoes, on my way to endcap."

"Harry! You stay out of this!" the super roared. "We got enough trouble here already!"

Harry shuddered inside his suit and obediently slowed his pace along the handholds. He had to blink several times to clear up his vision, and then he saw off in the distance, what had happened.

The flitter that was carrying the endcap girders must have misfired its rocket thruster. Girders were strewn all over the place, some of

them jammed into the skeleton of the endcap's unfinished structure, others spinning in slow-motion out and away from the habitat. Harry couldn't see the flitter itself; probably it was jammed inside the mess of girders sticking out where the endcap was supposed to be.

Edging closer hand over hand, Harry began to count the spacesuited figures of his crew, some floating inertly at the ends of their tethers, either unconscious or hurt or maybe dead. Four, five. Others were clinging to the smashed-up pile of girders. Seven, eight. Then he saw one spinning away from the habitat, its tether gone, tumbling head over heels into empty space.

Harry clambered along the handholds to a spot where he had delivered emergency oxygen tanks a few days earlier. Fighting down the bile burning in his gut, he yanked one of the tanks loose and straddled it with his legs. The tumbling, flailing figure was dwindling fast, outlined against a spiral sweep of gray clouds spread across the ocean below. A tropical storm, Harry realized. He could even see its eye, almost in the middle of the swirl.

Monster storm, he thought as he opened the oxy tank's valve and went jetting after the drifting figure. But instead of flying straight and true, the tank started spinning wildly, whirling around like an insane pinwheel. Harry hung on like a cowboy clinging to a bucking bronco.

The earphones were absolutely silent, nothing but a background hiss. Harry guessed that the super had blanked all their outgoing calls, keeping the frequency available for himself to give orders. He tried to talk to the super, but he was speaking into a dead microphone.

He's cut me off. He doesn't want me in this, Harry realized.

Then the earphones erupted. "Who the hell is that? Harry, you shithead, is that you? Get your ass back here!"

Harry really wanted to, but he couldn't. He was clinging as hard as he could to the whirling oxy tank, his eyes squeezed tight shut again. The bile was burning up his throat. When he opened

his eyes he saw that he was riding the spinning tank into the eye of the monster storm down on Earth.

He gagged. Then retched. Dry heaves, hot acid bile spattering against the inside of his bubble helmet. Death'll be easy after this, Harry thought.

The spacesuited figure of the other worker was closer, though. Close enough to grab, almost. Desperately, Harry fired a few quick squirts of the oxygen, trying to stop his own spinning or at least slow it down some.

It didn't help much, but then he rammed into the other worker and grabbed with both hands. The oxygen tank almost slipped out from between his legs, but Harry clamped hard onto it. His life depended on it. His, and the other guy's.

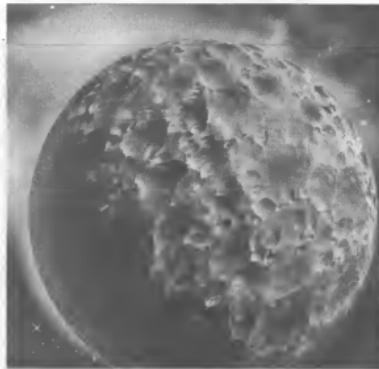
"Harry? Is that you?"

It was Marta Santos, Harry saw, looking into her helmet. With their helmets touching, Harry could hear her trembling voice, shocked and scared.

"We're going to die, aren't we?"

He had to swallow down acid before he could say, "Hold on."

She clung to him as if they were racing a Harley through heavy traffic. Harry fumbled with the oxy tank's nozzle, trying to get them moving back toward the habitat. At his back the mammoth tropical storm swirled and pulsated like a thing alive, beckoning to Harry,



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trying to pull him down into its spinning heart.

"For chrissake," the super's voice screeched, "how long does it take to get a rescue flitter going? I got four injured people here and two more streakin' out to friggin' Costa Rica!"

Harry couldn't be certain, but it seemed that the habitat was getting larger. Maybe we're getting closer to it, he thought. At least we're heading in the right direction, I think.

He couldn't really control the oxygen tank. Every time he opened the valve for another squirt of gas the damned tank started spinning wildly. Harry heard Marta sobbing as she clung to him. The habitat was whirling around, from Harry's point of view, but it was getting closer.

"Whattaya mean it'll take another ten minutes?" the super's voice snarled. "You're supposed to be a rescue vehicle. Get out there and rescue them!"

Whoever was talking to the super, Harry couldn't hear it. The supervisor had blocked out everything except his own outgoing calls.

"By the time you shiteheads get into your friggin' suits my guys'll be dead!" the super shrieked. Harry wished he could turn off the radio altogether but to do that he'd have to let go of the tank and if he did that he'd probably go flying off the tank completely. So he held on and listened to the super screaming at the rescue team.

The habitat was definitely getting closer. Harry could see spacesuited figures floating near the endcap and the big mess of girders jammed into the skeletal structure there. Some of the girders were still floating loose, tumbling slowly end over end like enormous throwing sticks.

"Harry!"

Marta's shriek of warning came too late. Harry turned his head inside the fishbowl helmet and saw one of those big, massive girders looming off to his left, slightly behind him, swinging down on him like a giant tree falling.

Automatically, Harry opened the oxy tank valve again. It was the only thing he could think to do as the ponderous steel girder swung down on him like the arm of an avenging god. He felt the tank spurt briefly, then the shadow of the girder blotted out everything and Marta was screaming behind him and then he could feel his leg crush like a berry bursting between his teeth and the pain hit so hard that he felt like he was being roasted alive and he had one last glimpse of the mammoth storm down on Earth before everything went black.

When Harry woke he was pretty sure he was dead. But if this was the next world, he slowly realized, it smells an awful lot like a hospital. Then he heard the faint, regular beeps of monitors and saw that he was in a hospital, or at least the habitat's infirmary. Must be the infirmary, Harry decided, once he recognized that he was floating without support, tethered only by a light cord tied around his waist.

And his left leg was gone.

His leg ended halfway down the thigh. Just a bandaged stump there. His right leg was heavily bandaged, too, but it was all there, down to his toes.

Harry Sixtoes now, he said to himself. For the first time since his mother had died he felt like crying. But he didn't. He felt like screaming or pounding the walls. But he didn't do that, either. He just lay there, floating in the middle of the antiseptic white cubicle, and listened to the beeping of the monitors that were keeping watch over him.

He drifted into sleep, and when he awoke the supervisor was standing beside him, feet encased in the floor loops, his wiry body bobbing slightly, the expression on his face grim.

Harry blinked several times. "Hi, chief."

"That was a damned fool thing you did," the super said quietly.

"Yeah. Guess so."

"You saved Marta's life. The frickin' rescue team took half an hour to get outside. She'd a' been gone by then."

"My leg..."

The super shook his head. "Mashed to a pulp. No way to save it." Harry let out a long, weary breath.

"They got therapies back Earthside," the super said. "Stem cells and stuff. Maybe they can grow the leg back again."

"Workman's insurance cover that?"

The super didn't answer for a moment. Then, "We'll take up a collection for you, Harry. I'll raise whatever it takes."

"No," Harry said. "No charity."

"It's not charity, it's..."

"Besides, a guy doesn't need his legs up here. I can get around just as well without it."

"You can't stay here!"

"Why not?" Harry said. "I can still work I don't need the leg."

"Company rules," the super mumbled.

Harry was about to say, "Fuck the company rules." Instead, he heard himself say, "Change 'em."

The super stared at him.

Hours after the supervisor left, a young doctor in a white jacket came into Harry's cubicle.

"We did a routine tox screen on your blood sample," he said.

Harry said nothing. He knew what was coming.

"You had some pretty fancy stuff in you," said the doctor, smiling. "Guess so."

The doctor pursed his lips, as if he were trying to come to a decision. At last he said, "Your blood work report is going to get lost, Harry. We'll detox you here before we release you. All off the record."

That's when it hit Harry.

"You're Liza's friend."

"I'm not doing this for Liza. I'm doing it for you. You're a hero, Harry. You saved a life."

"Then I can stay?" Harry asked hopefully.

"Nobody's going to throw you out because of drugs," said the doctor. "And if you can prove you can still work, even with only one leg, I'll recommend you be allowed to stay."

And the legend began. One-legged Harry Twelvetoes. He never returned to Earth. When the habitat was finished, he joined a new crew that worked on the next habitat. And he started working on a dream, as well. As the years turned into decades and the legend of Harry Twelvetoes spread all across the orbital construction sites, even out to the cities that were being built on the Moon, Harry worked on his dream until it started to come true.

He lived long enough to see the start of construction for a habitat for his own people, a man-man world where his tribe could live in their own way, in their own desert environment, safe from encroachment, free to live as they chose to live.

He buried his great-uncle there, and the tribal elders named the habitat after him: Mountain Eagle.

Harry never quite figured out what the monster was that he was supposed to slay. But he knew he had somehow found his path, and he lived a long life in harmony with the great world around him. When his great-grandchildren laid him to rest beside Mountain Eagle, he was at peace.

And his legend lived long after him.





Almost Human

by Jamie Wild

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Shea could tell that Sergeant Collin Dittmer didn't like him, not one bit. The steward had just shown Shea and Dittmer to the first-class suite they'd be sharing for the voyage to Vallyho. The suite was quite posh, consisting of two bedrooms and a common area. All of the furniture was overstuffed and looked extremely comfortable, there were lots of expensive lamps, and even the artwork on the wall looked as if it might be worth something. Shea immediately started to unpack.

"Permission to speak freely, sir."

"Wait a minute, Collin. Let me unpack my stuff and check the suite before we talk freely."

Dittmer nodded and watched as Shea stowed his stuff. Once Shea was done with that, he sat down at the room's computer terminal and interfaced with it. A moment later Shea was finished and he looked up at the white-faced Dittmer. Great, Shea thought, another fucking Mundane. "What is it that you want to say to me?"

Dittmer took a deep breath, "I know what happened on your last mission. You tried to leave Anderson and McCormick behind. I think you need to know that I'm serving with you under protest."

Shea didn't let his expression change. "Did Matherson tell you that Anderson gave us permission to leave if the situation warranted it?"

"I didn't say that I spoke with Matherson."

Shea let out an exasperated sigh. "Just answer the question."

"No, she didn't. It wouldn't have mattered if she had."

"Fine. Anderson did give us his permission to leave if we thought it prudent. Matherson and I disagreed on the definition of prudent. In retrospect I realize that she was right and I was wrong. I regret my willingness to leave *Tom* and *Mac* behind. I've learned that there are some options that should never be exercised. And Sergeant, don't worry, I won't be letting you down."

Dittmer nodded. Shea could see that he'd gotten part of his message across. Anderson had put Shea in charge and Dittmer was not in a position to question or challenge that.

"I just wanted to clear the air and get things right out in the open."

"I appreciate that. I don't expect you to trust me right away. But I will earn your trust, and I hope, your respect. Now about this sergeant and lieutenant stuff, we're supposed to be a couple of tourists enjoying ourselves. Let's act like it, shall we?"

Shea sat down on his bed. Well, working with Dittmer sure promised to be fun. The guy already hated his guts. What the hell could he do about that?

"I won't be letting you down," he whispered. How the hell could he have said that to him. I have no idea if I can be loyal or not. For all I know, I'll cut and run the first time our lives are in danger. Damn it, why can't I just know the way that these people know? He could blame it on his background, all the hard knocks he taken as a kid, but what difference did that make? He was who he was, and he was here in this situation because he had chosen to be in this situation. Other people were now counting on him, and he didn't know if he would come through for them.

Maybe he'd been wrong when he'd ask to buy into the unit. Anderson had told him that he couldn't buy the kind of loyalty he wanted with money. Maybe you had to develop it while you were still a child. Perhaps he was unsure about his ability to be loyal because he'd missed his chance at it. Maybe he could never be human.

The rest of the trip had been uneventful. It took Shea several more days to get a decent apartment on Vallyho. Once settled in Shea decided to see what the cyber environs were like. He interfaced and let

his senses flow with Vallyho's matrix. It was an alien place, far more primitive than anywhere he'd ever been before. The matrix existed on only three levels and was self-contained. It was the first time that Shea had ever run into a matrix that didn't have access to at least one other planetary matrix. And damn, but everything moved slowly. The hardware that supported it was at least thirty years out of date. The Coalition liked it that way. Valmont's matrix had been too wild and heavily trafficked to be effectively monitored. Not so on Vallyho. Anyone with top-of-the-line equipment could take it all in. And of course, top-of-the-line hardware was illegal here.

Shea's most recent military-level upgrades would have made him a major player even on Valmont. Here they were more impressive still. For all practical purposes there was only Shea and the Coalition, no one else on this matrix could compete. That held challenges of its own. If Shea used anything like his full speed he'd attract a whole lot of attention. On Valmont he could have blended in with the faster traffic. Vallyho just didn't have faster traffic. As far as Shea could tell, the Coalition had only one really good technician. His name was Meisner, and judging from the speed that he moved along the matrix he had to be a cyborg. Not exactly legal, but then that was the Coalition for you.

Shea monitored the matrix for the next two days, becoming one with its ebb and flow, finding out who the players were and who was aligned with whom. Then it was time to make contact and lay the groundwork for Anderson and the unit. Shea slid into a chat room. It was here that the labor leaders conducted most of their planning. Someone had set up a simple security sequence. It hadn't been enough: there was a direct data dump from the chat room to the Coalition data banks.

Shea carefully inspected both the security code and the Coalition's data dump. The Labor code was painfully amateurish; the Coalition's code work was considerably better, but no better than it had to be. After all, a bureaucrat had coded it. Shea carefully wove his own code into the existing framework and placed a small AI into the site. It would monitor the site's content and change some of it before the Coalition saw it. It was programmed to hide itself if anyone came looking for it. He'd been using this AI in one form or another for years and it had never let him down. Ideally, it would have been nice to cut the chat room off from the Coalition, but it was much too late for that. Damage control was the best Shea could hope for now. He had to be very careful. If the information from this room changed too much the Coalition might decide to have a closer look. Shea didn't need that.

Shea composed a message and dropped it into several of the more influential, and from Shea's point of view, troublesome, labor leaders' queues.

The People's Front is aware of your plight and would like to lend our support to your cause. We have huge financial resources at our disposal. It is time that we were all free from the Coalition's influence. As a show of our solidarity we have made a three million unit donation directly to your strike fund. The people of Vallyho shall not be denied.

Of course, the People's Front didn't exist. Well, not yet, at any rate, but they would by week's end. If Shea could create the People's Front quickly enough, money would pour in from all over the galaxy. There were a lot of people and organizations interested in seeing the Coalition's wings clipped. Shea had considered bolstering the existing secession movement, but it would have been more work than it was worth. They had no real organization, and the Coalition knew who every damned last one of them was. No, it would be better to

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start from the ground up than try to save such a dismal group.

Next Shea moved from one financial institute to another. Vallyho's banks had decent security, but since he wasn't trying to steal any money it took him almost no time to accomplish what he was after. At noon tomorrow every bank in the port would display the same message on their holo displays. *Let the Coalition beware, the people of Vallyho shall not be denied.—The People's Front.*

The finishing touch was an e-mail bomb set to clog up the Coalition's data banks with that same message.

The Coalition thought they had but one enemy: Earth. They were about to find out how wrong they were.

Shea checked his automatic combat pistol one more time and then dustered it. His sawed-off auto shotgun was already in its place in his duster. "Has the hired help arrived?"

Dittmer nodded. "I don't trust these guys. Do we really need them?"

"This is a big transaction. I don't like to take chances. If I had my

way we'd have ten more of them."

"Even so, these guys seem like scum."

Shea nodded. "You're probably right there, but we're dealing with gun runners, we have to be careful. If they think we can be had, we're dead."

"Shit, I've got a bad feeling about this."

"You've got your armor on."

"So?"

"So, just stay cool. Everything'll work out fine."

"I wish I had your confidence."

Shea smiled. "So do I. For what it's worth, I've lined up a doctor who knows how to be discreet, just in case anything goes wrong."

"Great, glad to hear it. That gives me the peace of mind that I need." Dittmer said sarcastically.

Shea smiled again. "Okay, let's get moving."

Shea and Dittmer went out and met the five hired guns. They were in a rough neighborhood and these men fit right in. Shea wished he knew more about them, but with the time limits he'd had, he'd taken what he'd been able to find. He'd gone over their records, nothing in them made him think they'd try to cross him. Even so, Dittmer had every right to be nervous. These men were nothing more than thugs. But if two of them showed up without these guys, the gun runners were sure to kill them. The only people more dangerous than drug dealers were gun runners, especially on a planet as anti-weapons as this one. Add to it that these gun runners were also gangbangers and you had a very volatile situation. These people played for keeps on a daily basis.

Twenty minutes later they were outside of the warehouse where the weapons were being kept. The warehouse was surrounded by several smaller buildings and a row of crates along either side of the road leading up to it. As far as Shea was concerned, there were too many crates. Shea and Dittmer got out of their car. The gun dealers were already there. Shea counted twelve men. They were outnumbered almost two to one. Shea didn't like that, not one bit. The hired guns stayed by the cars and covered while Shea and Dittmer walked towards the gun dealers. Shea looked about nervously. This didn't feel right, something was wrong. Shea did a quick scan of the area using a thermal sensor he'd recently had implanted. There were a number of heat signatures behind the crates on either side. It was looking more and more like a set-up. Shea looked over to Dittmer and nodded. Dittmer's eyes went wide, but he showed no other reaction. Shea moved off to the left, closer to the gun runners, and Dittmer to the right towards the warehouse's door. Shea didn't like it at all that he and Dittmer didn't have a clear avenue of escape. There were the gun

runners in front of them and the heat signatures to the sides and behind them.

One of the dealers spoke. "You brought the money?" Shea held up a cube. "It's right here."

The dealer held out a console that would transfer the funds. "Plug it in here."

Shea did as he was told and watched as the funds transferred. This was it, the gun runners would double-cross them now or not at all.

As soon as the money was done transferring the gun runners went for their weapons. Shea dove to the right and Dittmer to the left. Automatic weapons fire shattered the relative silence. Shea's hired guns went down without even firing. Dittmer, however, had taken cover and was already returning fire. Shea marveled at Dittmer's calmness. He hadn't lost a nanosecond of indecision. Shea found that his automatic shotgun was in his hands and he began firing.

The situation was not good. He and Dittmer had no support, they were separated, and badly outnumbered. The only reason that they weren't dead already was that they had been too close to the men transferring the funds for the ambush to take them as easily as it had taken their hired help. Without support, though, it was only a matter of time before they'd be dead. Looking about, Shea realized that he could slide between two of the buildings and probably get away, but Dittmer was pinned behind a crate. If Shea bailed, Dittmer was finished. Realistically, Shea realized that if he stayed they were probably both finished. Wouldn't it be better for the unit if at least one of them got away? Shea remembered his words to Dittmer, *"Don't worry, I won't be letting you down."* But what choice did he have?

Shea took stock of the situation. Dittmer was pinned, but putting up a serious amount of fire. Shea had two choices, run or shoot his way into the warehouse. He could see a delivery truck inside the warehouse. If he could get to it, maybe he could get it started, pick up Dittmer, and drive out of here. But currently his chances of getting into the warehouse didn't look good. Shea kept firing, but he started to back towards the gap in the building. Shea forced himself to calm down and choose his targets. If he kept his wits about himself and targeted with his enhanced optics there was very little chance of his missing. He gunned down three men as he started his retreat and suddenly he was aware that he'd created enough of an opening to get inside the warehouse. He took a deep breath and rushed towards the warehouse. ·

"Shea, get your ass out of here. The unit needs you," he heard Dittmer shout.

Shea ignored him and moved into the bay. Then he felt an immense impact just above his left shoulder blade and he was slammed face-first into the pavement. His shotgun bounced away and out of sight. Shea tried to breathe but his lungs refused to cooperate. Not knowing whether or not his armor had been penetrated, Shea forced himself to his knees and looked about. The warehouse was empty except for the single ten-wheeler truck that he had seen from outside. He got to his feet and moved towards the truck. As he pulled himself up into the blue cab, his lungs began to function again: each breath was agony. There were no keys in the ignition. Shea smiled. He'd learned how to hot-wire this type of truck when he was nine years old. He slammed his fingers into the steering column, broke it open with his titanium re-enforced fingers, and reached inside. He felt for the teeth of the ignition's mechanism and when he found them he pulled them straight back. The truck roared to life. Shea pulled his battle pistol out of its holster and drove the truck out of the bay. He stopped just outside the bay and put down some cover fire. Dittmer didn't hesitate, he launched himself at the truck. As soon as Dittmer had a hold of the door's handle, Shea put it back into gear. Dittmer shattered the window with his rifle and pulled himself in through the broken glass. He took several hits before he was inside.

"Fuck, it hurts," Dittmer said settling in beside Shea.

"How bad?"

"I think my armor held up, but I'm pretty certain some of my ribs are broken. Are they following us?"

"I don't think so."

Almost Human

"Shea, you had a clear exit. Why didn't you take it?" Dittmer asked through gritted teeth.

"I couldn't leave you there to die," Shea replied matter-of-factly. But what if that opening hadn't presented itself? He'd been ready to cut and run. Damn it, he really wasn't worthy of Dittmer's loyalty and probably never would be.

"Thanks."

"Let's get to that doctor I lined up. When the adrenaline wears off we'll both be hurting."

Dittmer nodded and then checked out the back of the truck. "Shea, you're not going to believe this. The truck is full of weapons and body armor and if I'm not mistaken it all looks to be standard-issue Coalition weaponry."

"No shi?"

"I guess they didn't decide to double-cross us until we showed up without enough heat."

"They made a huge mistake. I know who they are, and unless they get off planet, most of them won't live to see the weekend."

"You're going to kill them in cold blood?"

Dittmer looked over at Shea. "Look, Collin, I understand that you're a soldier and you have a different view of the world than I do. All of my life I've been a street punk. There aren't a lot of rules on the streets, but one of them is you always get even. If you let anyone walk on you, even once, you might as well lay down and die, and I'm not ready to do that."

Dittmer nodded but Shea couldn't read his expression. Shea found himself wondering if Dittmer approved of his reasoning and then he found himself surprised that he even cared.

Shea walked into the Jefferson Club. The restaurant was upscale, expensive, and busy. He could hear real crystal and expensive china clinking together over the sound of soft classical music. The dining room was spacious and lit by soft, warm lights and candles. In the very back of the room he could see the three gang leaders in the far left corner. They looked more like well dressed, middle-aged businessmen than gangbangers, but that was how it usually went. Older men making money off the blood of younger men. Today it was time to pay the piper. Shea understood how these things worked. He could go after everyone who had been present when the deal had gone bad and he wouldn't really affect these men. For it to be worth anything, payback had to start at the top and move down. Otherwise, the damage that he caused would just be part of the accepted and reasonable expense of doing business. That simply wasn't good enough for Shea.

"Can I help you?" a hostess asked Shea.

"No, I don't think so." Shea said walking past her. "I see my party."

Shea scanned the area as he moved towards the gang leaders. There were men with weapons at the three tables in front of the gang leaders, bodyguards. Shea had four tables to deal with. The bodyguards were just starting to take notice of him when he pulled his assault rifle out from under his duster and opened fire. They were good, but he was a cyborg with an enhanced nervous system. He had them completely outclassed.

Glass shattered, people started screaming and ducking for cover, and Shea continued to fire as he moved closer. Two of the body guards managed to get combat pistols out of their holsters, but they didn't live long enough to use them. It had taken Shea less than fifteen seconds to gun down all of the gang members.

One of the guards moaned and started to roll over. Shea stepped on the man's chest, pushing him back to the floor. "No one double-crosses me," Shea said in a loud voice. He punctuated the sentence by firing a single round. The words hadn't been for the dead gang member. They'd been for the rest of the people in the restaurant. He wanted to make sure whoever was left in charge of the Razors heard these words. Then they'd know why Shea had executed their top men. The point here was to make sure that no one on this planet ever crossed him again. Actual vengeance was secondary.

Shea turned and walked deliberately out of the restaurant. He didn't try to hide his face or rush away. His confidence was what they would

remember, nothing scared street people more than confidence, and the Razors would hear stories about how bold the assassin had been.

Shea could still hear people moaning and crying as he exited the restaurant. The sounds of sirens joined them as he moved into a dark alley-way.

Shea pushed his way through the police security. They really should guard their data better, he thought to himself. It took him less than a nanosecond to locate everything that the police had on the "massacre at the Jefferson Club" as it was being referred to. They had a tolerably good composite sketch of him on file. That wouldn't do. Shea decided that he just didn't look like a mass murderer. Let's change the hair color. What color hair should a killer have? Jet black. Yeah, that looks good, and while we're at it let's go with a buzz cut, kind of lends an aura of evil. Now this jaw won't do, it's just too damned weak, and the nose is too damned big. I don't think I like these vital statistics either, not big enough. I think a ruthless killer has to be at least five centimeters taller and thirty kilos heavier than this. Yeah that's more like it, now the drawing looks like a killer.

Now what about the witness' statements? This is fun. I think I'll change everyone's testimony just enough to drive any investigator insane. Let them try to identify me now. Shea fought down the temptation to leave a note in the file. He didn't think anyone else would find it amusing, but it would be true enough. There was a new sheriff in town and his name was Shea.

Several weeks later Shea woke to the sounds of someone pounding on his front door. It was three A.M. He grabbed his battle pistol and went to his computer before he was fully awake. Street instincts never dimmed. The circuitry monitor showed Dittmer and several members of the recently arrived unit that Shea didn't know very well out side of his door. Shea looked around the apartment. Everything seemed to be in place, so he didn't have to waste any time making it look presentable. The flat wasn't very big, but it fit him well. He disarmed the apartment's security defenses, threw on a pair of jeans, and opened the door. "Collin, what the hell do you want at this hour?" He heard an intake of breath from one of Dittmer's friends. Shea looked down at his chest. He'd forgotten just how badly he'd been scarred during his gang days. He was expert with a blade, but he hadn't started out that way, and he had the scars to prove it. Now that he had money, he really needed to get them touched up.

"Can we come in, sir?"

"Yeah, of course. What's going on?"

"Well, sir, some locals baited a friend of ours into a fight. He's been arrested. Sir, the minimum penalty for assault on this planet is forty years to life with no parole. I know that Major Anderson told us not to fight under any circumstances, but forty years!"

"Oh fuck."

One of Dittmer's friends broke into the conversation. "Corey didn't even throw the first punch. Two locals attacked him, one of them was an off-duty police officer. I think I saw them pocket Corey's money. Corey had a lot of it with him, and he was flashing it around."

Shea took a deep breath. "What's Corey's last name?"

"Keegan."

"Spell it for me..."

"K-E-E-G-A-N."

Shea turned his back on his visitors and moved over to his computer and a moment later he was in the matrix. He went directly to the police department's main banks. He found Corey quickly enough. Keegan was scheduled for trial in the morning.

Shea looked over the log. Officer Trent had made the arrest. Shea



Absolute Magnitude

looked over Trent's arrest records. He made an awful lot of arrests when he was off duty, and almost all of them were for simple assault. Another curious fact emerged; the same judge and prosecuting attorney always handled the cases. No question about it, these guys were setting people up. If Dittmer's friend was right, they were probably doing it for pocket change. Well, Shea would put a stop to that. Moving quickly, he changed some of the courthouse's financial records. Now Officer Trent, Judge Chapin, and Attorney Lane were embezzlers.

He dropped an anonymous note to the D.A. and several local papers. That should put a stop to these guys. In a month or so Shea planned to check on their prison accommodations. He'd make sure that they were rooming with some of their old acquaintances. Then they'd really know what kind of hell they'd been sending innocent people to.

Next he changed the charges in Corey's file from assault to jaywalking. Four hundred units would bail him out. Four hundred units for jaywalking... what a miserable planet.

Shea broke the interface and looked over to his visitors. Dittmer was the only one that wasn't staring at him white-faced. Fucking mundanes. "You're all set. He's now down for jaywalking. It'll cost you four hundred units to get him out. Once he's out, I'll erase the record of his having been there. But I do plan on reporting this to the major."

"Thanks," Dittmer said. "Ah, sir, I don't think the four of us have that kind of money."

Shea smiled and reached for his wallet; Vallyho was such a backwater place that they still used currency. "Here," he said pulling money from it, "I'm not going to let my work go to waste."

"We'll pay you back—" one of them began.

"Don't worry about it. Just get your friend out of jail. And then keep him out of trouble."

Dittmer and his friends mumbled their thanks and left. Shea smiled, rearmed his security system, and went back to bed. They hadn't been pleased about having to come to him, but they'd done it. It was the first real sign of acceptance that anyone from the unit had shown him. Man, it felt good to have helped them without any ulterior motives. Shea stopped for a moment; he wasn't sure if he'd ever helped anyone for free before. It didn't matter, he had now, and that was what was important. Maybe he really was becoming human, well almost human. But this had been easy, he hadn't had to risk anything for them. Would he have helped them if there had been a great risk to himself. Shea didn't think so.

By the time that Shea realized that the man approaching him in the alleyway had a pistol, it was too late to do anything about it.

"Well, well, well," the man said. "You've been giving me fits, Mr. Jones, Mr. Smith, or is it Mr. Yakimoto? You should be more careful when spring your associates from jail."

Shea did a quick scan with his infrared. The gunman was definitely a cyborg. "Meisner, I presume."

Meisner nodded. "I'm afraid you have me at a disadvantage."

Shea tried to remain cool. "It doesn't look that way to me. The name's Shea."

Meisner blinked. "Shit, I've actually heard of you!"

"Meisner, you've got to realize that I'm not a free agent. I'm not here alone. If you kill me, you'll be dead in twenty minutes." Realistically, Meisner would probably make it for a day or two, but Shea wanted to enhance Meisner's sense of urgency. "I'm not the only person who knows who you are. If I go missing your life isn't worth spit. The people I work with are very generous. I'm sure we can work

something out."

Meisner smiled. "No way I'm changing sides. The Coalition's not about to let this planet go." He reached into his jacket with his left hand and pulled out a slave unit. He tossed it to Shea. "Interface with that and you'll only do jail time. I'm sure the Coalition will go easy on you for cooperating."

Shea looked at the unit. Meisner was offering him his life. The threat was apparent. Cooperate and you live, don't and you die. As a gang member, loyalty had been a catch phrase, but virtually every gangbanger he'd ever known would have rolled over as quickly as possible to avoid serious jail time or death. Once this would have been a no-brainer. It's a drag to sell out your own, but death really sucks. Shea considered it. *You can't just buy into that kind of loyalty, you have to earn it. You have to be willing to lay down your life for it.* Anderson's words came back to him. Now he knew for sure, there

was no more wondering, no more worrying. He took a deep breath, took a long look at the unit, and tossed it over his shoulder. "Go ahead and pull the trigger, asshole, I'm not for sale." He was human after all.

Shea was braced for the worst when suddenly three men armed with combat pistols surrounded Meisner. One of them was Dittmer and the others were two of the people who had been at his place with Dittmer the night before.

"Put the weapon down slowly," Dittmer said, showing his teeth. "We'd just as soon not kill you."

Meisner lowered the pistol. He was no fool. Dittmer's two friends led him away.

Dittmer holstered his pistol and walked over to Shea. "You meant it, didn't you?" he asked with a new look of respect on his face.

"Meant what?"

"That you're not for sale."

Shea nodded, it was true. He could let the guilt go. He'd passed a test that even he couldn't doubt. "I'm part of this unit, and I'd sooner die than sell it out."

Dittmer smiled. "All three of us heard you say that and saw what you did, by this time tomorrow everyone in the unit will know that you would have died for us."

"Thanks."

"For what? You're one of us."

Shea took a deep breath and tried to stop the tears from coming. He hadn't expected to hear that. *You're one of us.* He'd been waiting his whole life to hear those words from someone who meant them. It felt like nothing he'd ever known before. "How'd you know he had me?"

"He was showing your picture around and asking questions. We've been tailing him."

"Man, that was close."

"Rest easy, I've got your back." And with that Dittmer followed after the others.

Shea knew that it was true, for the first time in his life someone had his back, and he trusted them. It was a strange feeling. He'd never trusted anyone before. For all its strangeness it wasn't a feeling he would willingly give up. He'd been right when he'd envied Matheron, Anderson, and McCormick their loyalty. Now that he'd earned Dittmer's he'd die before he'd betray it.



Primary Ignition

In the Company of Dinosaurs

by Allen M. Steele

The Royal Tyrell Museum is located in the most unlikely of places: the Badlands of Alberta, Canada, about a hundred miles east of Calgary. You get there along highways so straight, across countryside so flat, that you could easily steer by propping your knees against the wheel, passing a seemingly endless expanse of wheat fields and cattle ranches. Big sky country. After awhile, though, the terrain begins to gently roll beneath long, low hills that resemble standing waves, until the road abruptly dives into a vast desert valley, and suddenly you find yourself surrounded by an almost extraterrestrial landscape of shallow canyons, dry arroyos, and flat-topped mesas. Indeed, the Drumheller Valley looks less like western Canada than the high deserts of New Mexico, right down to the hawks circling sand and scrub grass.

Yet similarities to any place you've ever been before stops once you've reached the town of Drumheller. On one hand, it looks much like any other sleepy little burg anywhere in North America: a central business district surrounded by subdivisions, strip-malls, fast-food joints and car dealerships. Yet the place is overrun by dinosaurs. There's fiberglass brachiosaurs on the street corners and albertosaurs in the parking lots, duckbills lurking near the mailboxes and a black-and-white spotted dalmatianosaurus hanging out in front of the fire department. The largest building in town is a 125-foot tyrannosaurus looming above a water park, with a gift shop beneath its feet and a stairway leading up through its stomach and chest to a small observation deck within its gaping jaws. Peer out from beneath its teeth and you get a Godzilla-eye view of town, including the little cafe where you can order a one-pound burgersaur the size of a dinner plate.

But the serious fun isn't here, but on the outskirts of town. Situated among the twisting canyons and hoodoos, the Royal Tyrell Museum is Canada's only public institute devoted exclusively to prehistoric paleontology. In fact, so far as I know, it's only museum in the world whose sole subject is the dinosaur. And it is huge; dedicated in 1985, it's a massive postmodern structure sprawled across several acres, with a large new wing under

construction near the parking lot.

The museum (which gained the "Royal" part of its name in 1990, following a state visit by Queen Elizabeth) is christened after Joseph B. Tyrell, the father of Canadian paleontology. In 1884, on behalf of the Canadian Geological Survey, the 26-year-old geologist was exploring the Badlands in search of coal deposits when he discovered a dinosaur skull. Although Tyrell wasn't a paleontologist — indeed, at the time, the science was nearly as young as himself — he quickly realized that the fossil was of great importance, and thus contacted the Philadelphia Academy of Sciences. The skull was excavated and transported across the continent to the academy, where it was identified as a heretofore unknown species: *albertosaurus*. This in turn led to the so-called "Great Canadian Dinosaur Rush," during which American and Canadian scientists swarmed across the Badlands, discovering the largest cache of dinosaur fossils yet found in North America. In time, more than a hundred complete or partial skeletons were unearthed within 60 miles of Drumheller, with more fragments — pelvises, legs, skulls, teeth, ribs — turning up to this day.

You see the results of a century of dinosaur hunting as you walk through the museum: an amazing collection of these creatures, with nearly every one you've ever read about or seen in movies. Yes, other museums have their token T-rex in the main hall, yet they're like lost souls, put on incongruous display near johnny-come-lately sabertooths and wooly mammoths. The Royal Tyrell has a sabertooth skeleton, too, but it's one of a few mammals here; within the museum's vast main hall are forty dinosaurs: hadrosaurs and camarasaura, triceratops and stegosaurs, albertosaurs and *dionyochi*, posed in front of wall-length murals depicting the primeval savannahs across which they once roamed. An enormous tyrannosaurus skeleton dominates one room, while ichthyosaurs and plesiosaurs are suspended from the ceiling within another room, dimly-lit with blue light to simulate the lakes and channels in which they once swam. An upstairs gallery is devoted to the weird forms of aquatic life from Cambrian period that preceded the Mesozoic era, whose remnants were

discovered in the Burgess Shale formations of British Columbia.

This is the real Jurassic Park, more fantastic than Michael Crichton's novel or its movie version. Stroll through the museum on a Friday morning, when the main hall is still reasonably quiet and you don't have to dodge small children, and you get a sense of Earth's long and eventful past. The creatures whose remains are displayed here preceded humanity by millions of years, and dominated the planet for much longer than the meager sliver of time that we call history. In explicit detail, the museum puts the lie to creationist theory, and shows through direct evidence that evolution isn't a mere hoax but instead a reality far more wonderful than all the Biblical myths put together. If there was once an Eden, and if it was possible to travel back through time to visit it, then you probably would have been eaten alive by Adam and Eve.

And yet, the truly mind-boggling stuff isn't in the public areas, but backstage, through an innocuous door across the front lobby from the gift shop where the T-shirts and coffee mugs are sold. If you're lucky, someone will unlock it for you, and lead you down a sparse cinderblock corridor until you reach a steel accordion door. The door trundles upward on its recessed tracks, and suddenly you find yourself among dinosaurs.

* * *

Like all great museums, there are two parts to the Royal Tyrell. One is the public area, where the exhibits are displayed, and the other is behind the scenes, where the real work is done. Like an iceberg, there's much beneath the surface that remains unseen by the average visitor.

The accordion door opens onto a large storeroom; with its high ceiling and wide aisles between tall steel racks, it could very well be an industrial warehouse. Like nearby Drumheller, though, the familiar soon gives way to the unexpected, for stored upon those ten-foot racks are amorphous plaster casts, off-white and with bits of coarse burlap showing through the crumbling plaster. Some are as small as shipping cartons, but most are the size of dinner tables; marked in code with black felt-tip pen, they lie alongside each other

Primary Ignition

on the racks, resembling immense paper mache' boulders.

Within each of these casts, called field jackets, is a fossil. It may only be a femur, a thigh-bone, or a part of a skull; while most of the fully intact skeletons were found and carted away during the 1870s by the early paleontologists, there are still many remains still being discovered in western Canada. Once a fossil has been uncovered, it's carefully wrapped in plaster and burlap, along with the rock around it, to protect the specimen from the elements before it's removed from the site. Several hundred skeletons have been collected this way and taken to the museum, each marked with code numbers to identify them later.

In the back of the room, a fossil lies open within its field jacket. At first, you don't know what you're looking at: about ten feet by three feet, it almost looks like a ceramic sculpture, until you make out an empty eye socket here, an elongated mouth there, and then it dawns upon you that this is a skull. The head of an ichthyosaur, minus its beak; the rest of its body, nearly the size of a whale, is stored elsewhere. A smaller cousin is only display out front, but it's a minnow in comparison to this monster, and it's hard to gaze upon it without feeling an avastatic sense of dread.

A corridor takes you past various rooms (including a door marked "Noxious Laboratory") to the preparation lab. This is one part of the research facility that can be viewed by museum visitors; through a row of soundproof plate-glass windows high within the far wall, tourists peer down from a gallery at the scientists at work below. On this side of the windows, though, the room is filled with the hollow thrum of ostrich-neck exhaust vents, removing rock dust from the formica-top benches upon which men and women are cleaning fossils. Wearing face masks, goggles, and thin cotton gloves, they peer through microscopes as they wield small precision drills, much like those used by dentists, to carefully chip away bits of rock from around the fossils.

A prehistoric shark, about two feet long, lies on one table, emerging a fraction of an inch at a time from the dark brown stone surrounding it. Next to it is a primitive turtle, its broad shell nearly three feet in diameter. A small feathered dinosaur lies on a table nearby; almost three feet long, its head is tilted sharply back on its back upon its long neck, in the pose these creatures made during their death spasms. Because its skeleton is too fragile, this

specimen can never be fully extricated from the stone; however, dark gray areas surrounding the limbs show where delicate feathers once lay across its skin. It looks very much like a bas-relief; on occasion, the worlds of art and science converge and become as one.

Again, one is reminded of a scene from *Jurassic Park*: the incubation room, where cloned dinosaurs were hatched from their eggs. It's one thing, though, to see this sort of thing in a movie, and quite another to see the fossilized remains of an animal that died millions of years ago slowly coming into the light of a.d. 2002. Sometimes, science fiction doesn't hold an candle to real life; reality is often much more interesting than fantasy simply because it is tangible.

And yet, now and then, the two come together in unexpected ways.

When I was a boy, back in the '60s, some of the best toys came from the boxes of breakfast cereals. I don't remember which brand it was -- it might have been Kellogg's Raisin Bran, or maybe it was Cap'n Crunch -- but that was where I got my introduction to dinosaurs: not from books or movies, but from the little plastic dinos that came in breakfast cereal.

I had brontosaurs and tyrannosaurs and stegosaurs and pterodactyls, all molded in undinosaur-like colors of blue and red and pink -- although, come to think of it, who can say that there weren't any pink dinosaurs? Thirty years ago, no one would have believed that they might have been warm-blooded, or had feathers. They didn't resemble dinosaurs as we know them today: their tails dragged on the ground, and their skin was scaly instead of smooth. Yet in the eyes of an eight-year-old kid from Tennessee, these miniature monsters provoked wonder and awe, and I spent hours playing with them on the living room floor, staging mock battles between them. No telling how much cereal I must have consumed to collect the complete set; I surreptitiously dumped half-empty boxes into the trash, so that my mother would have to buy some more of the stuff the next time she went to the grocery.

Most kids get fascinated by T-rex or pterodactyls, but they weren't my favorites. My main man was the triceratops; those three horns protruding from its skull made it look like a mean, green fighting machine. As I got older, I came to appreciate the others more, but the triceratops has always held a certain fond place in my heart, even if current research

indicates that it was little more than an overgrown cow with armor plating and an attitude.

The collection room of the Royal Tyrrell looks much like the room where the field jackets are stored, yet now the plaster casts have been stripped away and the rock has been cleared from the fossils. Tall metal racks, each one holding fossils of a dozen different species discovered in Alberta: the skulls of ceratosaurs and hadrosaurs, the massive tail bones of ankylosaurs, fossilized clusters of eggs, an enormous ammonite shell nearly six feet in diameter.

And yet, the moment I walked into the room, the first thing that got my attention was an enormous triceratops skull, sitting on a shelf as if the creature that once owned it had died only yesterday. For a few moments, the middle-aged man that I've become went away for awhile, and the kid who's still lurking somewhere inside came back out. I gaped in awe, and laughed out loud, and reached up to touch its middle horn. If there had been a forklift parked somewhere nearby, I might have been tempted to climb aboard and use to hijack this priceless artifact. Not that I would have gotten very far with a stolen dinosaur skull; at the very least, it would have been a bitch to explain to American customs.

Ask what science is good for, and you get a variety of different answers. Increasing our knowledge of the universe. Exploring our world and those beyond. Finding the reasons why we're here, and possibly where we're going. Settling our innate curiosity. Supplying meaningful employment to thousands of postgrads who otherwise might be living with their parents and working the drive-through window at Burger King. All well and good ... but somehow, I think it all comes down to one thing, and that's our need to have our imagination provoked in such a way that we feel a sense of wonder.

You find this in astronomical observatories and through the lens of a microscope, in the subterranean tunnels of particle accelerators and at the bases of launch pads, in rain forests and on the slopes of high mountains. And in the company of dinosaurs, who perished a long time ago, but whose presence is still being felt today.





This Sporting Life

by Chris Bunch

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The fat man crept out of the hotel's service entrance, peered around cautiously.

The night was silent, except for a few passing lifters and the buzz of wet circuitry above, on the primitive electric grid.

All he had to do, he thought, was go down three blocks to the lux hotel where the lifter cab rank should still be manned, grab the first one, and make for the spaceport.

Then he'd be safe.

He swore at himself for thinking he could outthink Them by staying in this working-class hotel, instead of the properly luxurious one his per diem entitled him to.

Hotels like this one was where They stayed, saving their credits for alk and bail funds.

The fat man, wishing he'd had some kind of military training to help, crept along the high wall, moving as quietly as he knew how.

It was late, very late, and hopefully They had drunk themselves into oblivion and wouldn't still be looking for him.

He'd fooled them for awhile with twin connecting rooms, one under his own name, the other under a false one. They'd broken into the first room, smashed it to bits, hammered on the connecting door, but, since there was no answer, had given up.

For the moment.

The fat man came to the first street crossing, crouched and went across, waddling faster than he'd moved in years, except when he was on the field.

The silence held.

He went down another block, and reached a boulevard, started across.

He was halfway to the other side when the baying came. A block away, half a dozen stumbling men saw and recognized him.

"Kill th' fool," "Tea' im," "Deader' n th' Devils," the cries came. The man ran faster. Safety was close, very close.

He didn't make it.

Two dozen of Them came out of an alley ahead of him.

The fat man skidded to a stop, darted across the street, hoping for safety, an open door, stairs, anything.

There was nothing but high stone walls.

They caught him within a hundred meters.

Bottles arced toward him, struck. He stumbled on, and then a heavy rock took him between the shoulder blades. He fell, clawed his way up. But it was too late. They were on him with boots, iron bars, fists.

It was almost a relief to let the pain take him down and down into nothingness.

Jasmine King was an utterly beautiful woman, so beautiful and competent that her former employers, the security firm of Cerberus Systems, had decided she was a robot, and hence no longer deserving of a salary.

That had led her into the employ of Star Risk, Ltd., where she was now office manager, head and only member of Star Risk's Research Department, head and only member of the Personnel Department, and a junior field operative, since her experience in the covert was less exhaustive than the four other principals.

Star Risk's offices on the 43rd floor of a new 50 story high-rise, were mixt with touches of the old-fashioned, the current fashion on the pleasure world of Trimalchio IV.

There were two people in the large reception area: Jasmine, currently manning the reception desk, and a rather mousy man.

Jasmine keyed her whisper mike.

"A possible client," she said. "Not rich-looking. Named Weitman.

Said he'd discuss his business with an operative. Suspect he's a little confused, has a cheating wife or partner, and thinks Star Risk is some sort of investigative service."

Jasmine listened.

"No," she said. "There's nobody else out here but me, and no jobs on tap, either."

She smiled as Weitman looked up.

"Someone will be right with you."

The little man nodded jerkily.

The door to the inner offices opened, and a nightmare lumbered in, all silky fur, and almost three meters tall.

"Good morning, Mister Weitman," the creature rumbled. "I am Amanandrala Grokkonomonkif, which no one beyond my race can pronounce, so you should call me Grok."

"Come into my office, and we can discuss your problem."

The little man got up, and followed Grok.

He stopped, turned back to Jasmine.

"For your information, Miss...King, I'm not confused about what Star Risk does, nor am I looking for separation evidence."

He smiled, a not altogether pleasant smile.

"My father taught me to read lips at a very young age."

Weitman followed Grok, closing the door behind him.

Jasmine King was busy proving she blushed perfectly, as she did most other things.

* * *

"Have you ever heard of the game of skyball?" Weitman asked Grok earnestly.

The alien suspected Weitman did everything earnestly.

"A game?" Grok said. "No, I haven't, beyond a little, historically, of Earth football. My race doesn't practice physical displays of competition, but rather find pleasure in debate on a higher level."

"When we aren't killing each other," he added.

Weitman wasn't listening beyond the "no."

"Skyball is one of the greatest of all sports," he said. "It requires the utmost of physical development and coordination, plus a high degree of intellectual achievement. There is also a large element of chance, which makes all things more interesting."

"I assume," Grok said, "given the name, that it's played with aircraft, such as the ancient game of poloponies I've read about."

"There are no mechanical devices in skyball," Weitman said. "Except, of course, for the ball, the antigravity generators, and the random computer."

"Ah," Grok said. "Sheer muscle and skill." Weitman didn't notice the sarcasm, as he went on:

"Skyball's an invention of the early spacefarers," he said. "It was originally played in space, under zero-gee conditions. But as it grew in popularity, and few fans find zero gravity exactly easy on their digestive tracts, particularly if they're drinking, its rules were changed, and it is now played in stadiums, on planets."

"The field has antigravity generators above it, so normal gravity is negated. There are ten women or men to a side, and their task is to carry the ball, any way they choose, to the opponent's goal."

"The other team, naturally, tries to stop them and secure the ball itself, in any way they choose that doesn't constitute a major felony. Play is in four quarters of fifteen minutes each."

"To complicate matters, the ball has an internal, varying gyroscope, so in mid-throw, it might suddenly change its direction of travel."

"In addition, there are antigravity generators hidden below the playing field, which turn on and off in a random manner to affect the ball and the players."

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"Skyball has become enormously popular within the Alliance, particularly on certain worlds, who have vaunted rivalries."

"This is quite fascinating," Grok said. "But Star Risk deals deal in bullets, as the old saying goes."

"I assume you have professional athletes playing the sport, and would hardly like to recruit mercenaries and men of violence such as ourselves."

"The sport is one thing," Weitman said. "It is violent enough. But there is violence off the field as well. Certain planets have become absolute fanatics about skyball, so extremely so that actual wars have been fought over interplanetary championships."

Grok made no comment.

"This is bad enough," Weitman said. "But there are also thuggish followers who have attacked players and coaches."

"More recently, some of them have assaulted members of my guild, which is the Professional Referees Association. A week ago one of our members was beaten to death after a match."

"This is intolerable."

"The current league finals are between the planets of Cheslea and Warick, whose fans are among the worst of the offenders."

"We advised them that if they cannot guarantee security to our members, we will refuse to judge these finals."

"Both worlds seemed unconcerned, and said they would provide officials of their own."

Weitman shivered.

"For reasons I won't go into, that is a terrible idea."

"PRA has authorized me to investigate various firms who provide security services, and Star Risk is the one I have chosen."

"We want to hire you to keep the seven referees who'll officiate at these final matches on Warick from any harm, and are prepared to pay one million credits, plus all expenses, to ensure no harm comes to them."

Grok stroked the fur on his chest, considering.

"Interesting," he said. "Very interesting. I think Star Risk will be more than delighted to accept your offer."

* * *

"You did what?" M'chel Riss moaned.

Riss was tall, blonde, green-eyed, and looked more like a model than the Alliance Marine major she'd been before she quit the service and went mercenarying as one of the founders of Star Risk, ltd.

"It seems like a nice, simple assignment," Grok said in an injured tone.

"A nice, simple way to get dead, you mean," Chas Goodnight said.

Goodnight, a few centimeters taller than Riss, was sandy-haired, with a friendly twinkle in his eye. M'chel considered him the most amoral person she'd ever met. He was also ex-Alliance, a "bester," one of the handful of bio-modified commandos who did the loose confederation's dirty work. He'd been one of the most respected besters, until he decided cat burglary paid better than assassination and skulking through the bushes. Star Risk had broken him out of a death cell. Now he wasn't quite a full partner, but more than an employee.

Goodnight's talents included being able to see in the dark, reactions three times that of an athlete, brain circuited for battle analysis, ears able to pick up frequencies up to the FM range. In bester mode, he was "powered" by a tiny battery at the base of his spine. When it ran dry, after about 15 minutes or so, he was drained, until he input a few thousand calories and hopefully slept around the clock.

Friedrich von Baldr, the firm's head, nodded slowly, but didn't say anything. Von Baldr was another rogue, who claimed to have been a colonel in the Alliance, but was actually a warrant officer who hastily left the service ahead of various court-martial charges involving government supplies gone missing, nor was his real name von Baldr.

"You three obviously know something more than I do," Grok said.

"Skyball's a game," Riss started, "and—"

"I know that," Grok interrupted. "Weitman gave me a basic brief-

ing, and I looked it up in *Encyclopedia Galactica*. Seems a rough enough, rather predictable sport. Not that we'll have anything to do with the game, merely protecting the officia.s."

"Merely," Goodnight snorted. "Merely! Grok, comfort of my youth, bower of my old age, let me tell you a story."

"A few years back, when I was still somewhat honest, and working for the Alliance shilling, me and a few of my teammates were chasing a guy named Purvis around the Galactic lens."

"The Alliance wanted him alive, because he'd...never mind what he'd done. They wanted him bad, so they could work him over and find out what they wanted to find out. We were told we'd get our paws slapped if we came back without him, or maybe worse, with him in a bodybag."

"Purvis heard he was hot, and so he cut and run. We got word that he'd set up shop as a games advisor on Cheslea, which is one of the teams in this skyball championship. Their team, by the way, is the Black Devils."

"Games advisor, right. So we harrumphed off after his young ass."

"We got to Cheslea, and there's no sign of him. The planet's a madhouse, which it is anyway, since the people seem to think logic starts in the key of C sharp, and run their society accordingly."

"But when we arrive Cheslea's an extra-special madhouse, because the Black Devils are facing their worst enemy, the Uniteds, which are from the planet of Warick."

"I see you nodding, Grok. It gets worse."

"So we moil here and there, and there's no sign of Purvis, and then it's time for the games to start."

"It's one all, then two all, and game Five is gonna settle matters."

"We get reliable word that our boy is gonna be at the game, and so we show up, with prize seats, two ways out, and a big sack to put Purvis in when we find him."

"The stadium, by the way, is, or was, anyway, sort of open air, with the antigravus hung on spidery scaffolding arcing over the top."

"It was a crappy hot day, and the sun was blistering down. I wanted a beer in the worst way, but I knew if I got one, and the mucketeers found out I was slicing on the job, I'd ge: a strip torn off. Which would've been a lot better than what happened to all of us when we got back to friendly waters."

"But I'm getting ahead of things."

"None of us were paying attention to the game, we're busy looking around for our lad."

"And we spot him, in the last ten minutes of the game. It was kind of hard to see, because all the stands were glittering. The Cheslea fans had programs that were silver foil, and the dazzle was, well, dazzling."

"There's a lot of hollering going on, because it's a tight game, and everybody from Cheslea just knows the referees have been bought out by Warick."

"We're working our way up to the top of the stadium, and the score is tied. Then Cheslea makes a goal, and the officials call it illegal or some such."

"I thought the fans were going to go apeshi:, especially when Warick scores a few seconds later, and the clock is running out."

"Instead, this low muttering starts, and gets louder, and I feel a creep going down my spine. Everybody else on the team is looking just as nervous."

"The officials are gathered together, down on the field."

"Then there's this almighty flash, coming from everywhere, and a gout of smoke, and there's no more goddamned referees down there."

"Turns out this was Purvis's ultimate plan if things went awry. Print the programs on this silver reflecting paper. Put a little aiming hole in it...which was disguised as a skyball with an emblem on the cover...and then, if things went wrong, as they just had, hold the program up, catch the sun, and aim it down at the officials."

"The whole stadium was a huge mirror."

"Fried the refs like steaks. Well done steaks. Barely a few coals here and there."

"And at that point things went completely berserk, with the fans

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from Warick trying to get out and back to their transports, and the Cheslea roosters trying to stop them.

"It was a hell of a riot."

"A hell of a riot," Goodnight repeated.

"What happened to your target, this Purvis?" Riss asked.

"We found out he got dead in the hoaraw," Goodnight said, blandly. "Which of course none of us had anything to do with. But we still got in a world of shit when we got back to base."

"There's no justice in this world," he concluded, then looked at Grok.

"And that's the kind of thing you've dumped us into for a lousy mil and burial expenses."

"Sometimes I wish," Riss said forlornly, "Star Risk didn't have this tradition of never refusing an assignment unless we don't get paid or the client's lied to us more than acceptably. Who made that idiot policy, anyway?"

"I think," Friedrich said, "it was you, m'dear."

The madhouse started at Warick's main spaceport. Fans from Cheslea were cascading off chartered transports, in every shape from unconscious stretcher cases to hungover and fighting to sober and looking for a drink.

The five Star Risk operatives came in on a standard liner, and were able to grab a lim to their hotel by virtue of looking sober and waving a large bill.

They overflowed improvised parades, street fairs, and marching bands.

"So who'd ja favor?" the lim driver asked.

"Peace and quiet," von Baldur said.

The driver snorted.

"Damn' little of that to be got for the next two weeks. P'raps I best run you back to the port and you can try another system."

"We're where we belong," Riss said.

The driver looked back, and almost sideswiped a cargo lifter dripping banners: WARICK RULES, UNITEDS CONQUER, and such.

"You folks have something to do with the Finals?"

He was about to be impressed.

"We're psychologists," Goodnight said. "Specializing in the madness of crowds."

The driver's head snapped forward, and he said no more. As they grounded at the Shelburne, which was not only where the officials were staying but the most luxurious hotel on Warick, he not only refused to help unload their surprisingly heavy luggage, but also would take no more than the set fare.

"I note they take this skyball most seriously," Grok said. "I have never heard of a cabbie refusing a tip."

"That's a sign and a warning," Riss said. "Let's make sure we don't do anything else to show what we think."

"And, most particularly," von Baldur said, "Make sure we do not

wear any emblems suggesting we back either the Black Devils nor the Uniteds. Nor should mistakenly wear their colors, which are, naturally, black and red for the Devils, and solid blue for the Uniteds."

* * *

"Actually," Weitman said, "we're quite prepared for all normal eventualities."

The other six male and female officials in the hotel suite in the room nodded agreement.

"First," the referee went on, "note my outer clothing, these black and white striped pants and shirts, are proof against most solid projectiles, although, of course, the shock must still be accounted for.

"This is why, under the shirt, and extending down over my groin, is a shock-absorbing vest, which is also intended to deal with hurled bottles, rocks, and such.

"My little cap is padded, and will take an impact of a kilo at up to 20kph."

"My boots are steel-toed and -soled, and I'm wearing knee and elbow pads in case I get knocked down."

"I'll have gas plugs in my nostrils, and baffled plugs in my ears, in case they try to use any amplified sound devices against us."

"Plus, I'm carrying a small gas projector on my belt, and...you must not breathe a word of this to anyone else...I'm carrying a small aperture blaster here, in my crotch.

"And of course there's stadium security, supposedly one for every 25 people in the audience, although we've got to assume some of these guards will be as likely to be partisan as the crowds.

"Which is why we're depending on you five to get us out of any real problems."

He smiled at the Star Risk operatives.

"Wonderful," Goodnight said. "Simply frigging wonderful. Ah, for the life of a sports fan."

* * *

Both the Devils and the Uniteds were at their conditioning peak in the first game.

The action swayed back and forth for three quarters, neither side able to score.

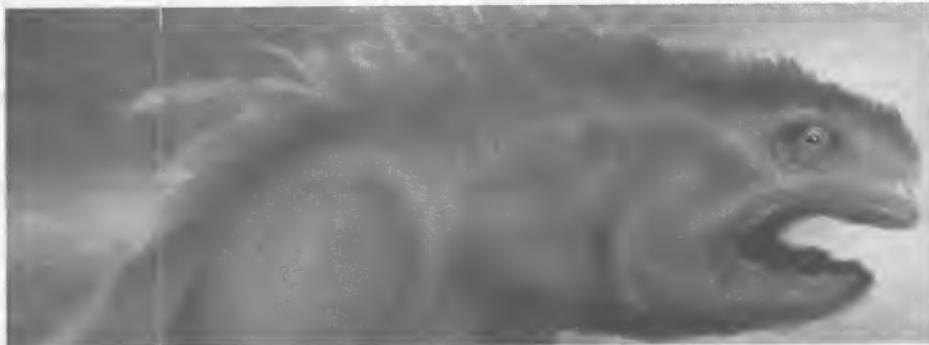
Then, halfway through the fourth quarter, with Cheslea having the ball, the Warick team leapt high into the air, trying a drive over the Warick line, going up almost to the roof of the covered stadium, floating for an instant in mock weightlessness, then lobbing the ball hard for the small goal.

The pitch was clear of the antigrav generators, and was going straight as hurled when its gyro came to life, and sent the ball spinning into the hands of a Warick end.

He moved instantly, threw hard, under the Cheslea players, still coming down from their positions near the roof.

One-nothing.

And that was the only score for the game.



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There'd also been no penalties called, even though M'chel Riss, from her position in a skybox, saw at least two kneeings and one punch to a woman's breasts.

The fans were well behaved, and mostly fairly sober.

Grok saw only twenty or so people grabbed by stadium security for offenses like hurling smuggled bottles at the players, or having a private punch-up in their row.

"If it stays like this," Weitman said, "we'll all be home free."

* * *

Star Risk decided for the second game they'd spread out through the stadium, keeping only the most noticeable Grok in the skybox, with a com to their earpieces.

This game was far more open than the first. It seemed both sides had been gauging their opponents, and now, having found weaknesses, drove for the kill.

And this time the officials seemed to have done the same.

Eight penalties were called in the first quarter, six in the second.

And the score was 7-3, again with Warick in the lead.

A woman official had just called the first penalty of the third tripping, which seemed to be one of the few things, beyond bludgeons, skyball didn't permit.

Von Baldur, near one of the player's dugouts, intended to keep them from aerial assault from their fans, caught the movement.

He spun, saw an enormously fat woman dig something out of her oversize handbag, and scale it at the referee.

Von Baldur shouted "Down," and the official went flat. The something turned out to be a hand-made ancient boomerang, and smashed into the turf not a meter from the woman's body.

The obese woman was digging in her handbag once more. Friedrich didn't wait around to see what it was, but swarmed over the high fence separating the fans from the field.

There was a stadium security man who shouted: "You! Hey you! You can't do that!"

Von Baldur paid him no mind, but went up the steps, two at a time, then shouldered his way into the row the fat woman was in, just as she pulled out what looked to be a grenade.

A younger man, but with the same piggy features of the fat woman, came up, fists lifting.

Von Baldur snap-kicked him in the chest, let him stumble into his evident relative, rolled away as the grenade, hissing, dropped to the concrete.

A few seconds later, it went off, and a noxious gas sprayed the area.

By that time von Baldur was rolling back down the steps, not turning around to see people gagging, on their knees choking, vomiting, until he was halfway back the way he'd come.

He noted with satisfaction the fat woman and her relative were among the worst hit, then looked down at what had been his rather dapper lounging outfit.

"New suit," he muttered. "Three hundred and twenty seven credits. Expense."

The end score was 9-4. Two out of two for Warick.

The game had been stopped three times, when players were taken off on stretchers. One of them didn't appear to be breathing.

The visiting fans from Cheslea were going somewhat berserk, sure that the game was rigged for Warick, that somehow the antigrav or the ball itself had been rigged to favor the home team.

* * *

Goodnight was in the Shelburne's bar, the archaically named Heron and Beaver, and he saw one of the Cheslea players, surrounded by two prosperous businessmen sporting Blue, and half a dozen bodyguards, women and men whose eyes never stopped sweeping the crowded bar, and whose hands stayed close to their waistbands.

The player looked like the others — stocky, well muscled, but the muscles were those of an acrobat.

Goodnight wandered over, and when the player made a joke about a rival team, Goodnight laughed, lifted his glass in a mock toast, grinned wryly.

"You know about the Knights, eh?"

Goodnight had never heard of them.

"Of course," he said. "And your story isn't the half of it." He told a story of his own. The original butt of the joke had been an incompetent and unlucky Alliance unit, but now it became the Knights.

One of the businessmen bought him another beer, and Goodnight was suddenly the player's new best friend, although the bodyguards regarded him most suspiciously.

Chas wasn't sure what he was looking for, other than more familiarity with the assignment.

The businessmen got drunk, but everyone else stayed sober, although Goodnight let it appear that he was becoming wobblier than he was.

The evening wasn't producing much, except the probability of a thick head if Goodnight kept drinking.

Fortunately, tomorrow was a rest day.

"So tell me, Dov," Chas said, deep in the evening, "I could see today how good you are. But what made you get into skyball in the first place? What else did you consider?"

"Aw," the man said, "I always liked playing. I come from money, so m'da had a yacht, and we could always make up a game somewhere in the asteroids or in one of the system's boneyards.

"Why'd I turn pro?" Dov looked around, making sure no one else was listening. "I got in some trouble, and the magistrate said it was either conditioning, prison, or going off-world. Da had disowned me, so I was thinking about the military.

"But that sounded real dangerous, and so when a semi-pro team said they needed substitutes, I made damned sure I was there at the head of the line and worked my ass off to play harder and better than anyone else.

"I mean, the Alliance military? You can get actually-killed doing that."

Goodnight had nothing to say.

* * *

"If you're awake and coherent," Grok said in what he probably thought was a coo, "or at least awake, since you're on your feet, Chas, my friend, I have something of interest for you and for the others."

The Star Risk operatives were assembled for a scanty breakfast in one of the suites' dining rooms.

Riss and Jasmine had little but juice and a bran cereal since they were watching their weight. Grok had had four raw eggs and a tea, and Freddie von Baldur, also aware of his waistline, had just caff.

Goodnight, who normally shoveled down breakfast platters with both hands, was gingerly putting a fruit juice and vitamins down.

"I have acquired," Grok went on, "probably from too long an association with you humans, which can be measured in nano-seconds, a certain distrust for humanity."

"A good thing to have," von Baldur said.

"Over the past four days, I've taken the liberty to plant some devices, listening devices, in our clients' rooms," Grok said.

"Imagine my surprise when I've discovered that four of the seven have been in negotiations with various elements to shade their judgments."

"Well, bless my soul," Jasmine said. "And we're supposed to be keeping them alive?"

"Let's bail," Chas said, hangover making him snarly.

"Perhaps we should, perhaps we should not," Grok said. "It is interesting that two of them appear to have taken bribes to favor Cheslea, and two to back Warick in their calls."



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"Ah," M'chel said. "That makes it two against two against three. Assuming those three haven't already made their own arrangements."

"Most interesting," von Baldur said. "And now I understand why you wanted to talk about this, Grok."

"Exactly," the alien said. "The equation seemed to balance to me." "We could just keep on," King said, nodding understandingly, "and let matters shake out as they will."

"No," Goodnight said. "Not business as usual. What about the money? If they're getting cute, what's to say they won't get cuter when it's payday?"

"My thought as well," von Baldur said. "I think I shall approach our principals, and inform them that circumstances have altered, and we require the million credits to be placed in an escrow account.

"With, say, Alliance Credit."

Riss smiled, a bit sharkishly.

"I assume, Freddy," she said, "you aren't planning on telling our seven clients or the Professional Referees Association that happens to be our bank."

"I was not," von Baldur said. "As I have said before, and no doubt shall say again, never snarfen up a chump. If they ask about Alliance Credit, of course I shall tell them. But not before."

"I am not content," Grok said, "that we are responding properly to events."

"Nor am I," King said. They were alone in a suite. "A mob can get out of hand very quickly."

"Perhaps you should check with some of our colleagues for emergency assistance," Grok said.

"Just what I was thinking," Jasmine said.

* * *

"You realize," Riss said, "since the series is the best of three, and Warick's already won two, if today's game makes it what I think they call a shut-out, there will be serious chaos."

"I'm aware, I'm aware," Goodnight said. "That's why I've got a blaster in my boot and another under this stupid jacket. Not to mention a couple of grenades, real bangsticks, not gas type like Fatty had, in the pockets."

"There's also some rifles in the skybox," Riss said. "I put them there myself, in the first aid locker."

It did get rough.

Goodnight saw "his" player from the bar kick the legs out from under a Black Devil, then "accidentally" fall on his chest, heard ribs crack.

A referee was looking right at Dov, then turned away, without hitting the penalty flasher across his uniform's back.

Warick led at the end of the half.

As the players trooped off, there was a roar from the crowd. Riss saw ten fans, arms linked to form a phalanx, charge the stadium security at one of the field gates. Behind them came twenty or so goons, mostly drunk, waving clubs they'd somehow smuggled in through security.

"I don't think so," Riss said to herself, and ran hard to intersect the miniature mob.

Jasmine King was a ready there, blocking the gate.

One man swung at her, and she kicked him in the kneecap, pushed him into his mate, then smashed a third in the temple.

"Goddamit," Riss shouted, "Not with your hands!"

Jasmine heard her, looked away, and somebody punched her in the jaw.

King staggered, went down, and the man was about to put the boot in.

"Enough of this shit," Riss snarled, drew a blaster and blew the man's head off.

Blood sprayed across the mob, and they shrieked, hesitated.

M'chel shot two more of them in painful places, listened to the

yowls in satisfaction, then ran forward and dragged Jasmine away. Cheslea came from behind to take their first game, 8-6.

* * *

"How is it?" von Baldur asked.

Jasmine gingerly moved her jaw. The other operatives were standing around her in the hotel suite.

"No breaks," she said.

"What about teeth?" Riss said.

"I think a couple are loose," King said. "But they'll tighten up."

"You're sure you don't want a doctor?" Riss asked.

"No," Jasmine said. "I'll be fine."

Riss thought, of course. A woman who might or might not be a robot and was keeping her secrets would hardly chance discovery by a stranger.

"I don't like this," Goodnight said. "Not one goddamned stinking bit. Nobody roughs up our Jasmine."

"Why Chas," King said. "You're getting sentimental."

Goodnight grunted, poured a drink.

"If they were to blame, I'd say dump our clients and let the bodies bounce where they will," he said.

"No," von Baldur said. "That would hardly be professional."

"A thought," M'chel Riss said. "This is a one-time contract, right? We're never ever coming back to this world, nor to Cheslea, and we're sure as hell never going to get involved with sports, right?"

"No," Grok said. "I have learned my lesson well."

"Fine," Riss said, and her voice was very hard. "These bastards want to escalate...we should be able to handle that, as well."

"Jasmine and I are far ahead of you," Grok said. "All we need is permission to implement."

He explained.

When he finished, Goodnight and King had taut smiles on their faces. Von Baldur and Riss were stony-faced.

"Do we need to put it to a vote?" Riss said.

"I do not see why," von Baldur said. "The plan appears to give us the best of both worlds."

"And we do have a long weekend before the next match," Goodnight said. "More than time enough for Jasmine to get things moving."

"Good," Jasmine said, getting up from the couch she'd been laying on. "Assuming my jaw doesn't fall off, I'll start making the calls."

* * *

The fourth game had high stakes. If Cheslea won it, it would be a tie series, if Warick, that was the end.

The fans seeped into the stadium slowly, quietly. The stadium security made no attempt to react when gate metal detectors buzzed, nor did they ever see bulging coats.

Weitman met von Baldur inside the entrance tunnel.

"I'm afraid there might be a riot today," he said.

"Do not worry," von Baldur said. "There is only one mob, and there are five of us. We have them outnumbered."

Weitman attempted a smile.

"We should have practiced a...what do you military sorts call it, an emergency withdrawal?"

"There is no need to practice anything," von Baldur said. "We're most competent at what we do."

A few minutes later, the game began.

Play was vicious, but the officials called penalties fairly, or at least evenly.

Three players on each side were thrown out for roughness and arguing with the referees.

At the first quarter's end, it was 2-2.

At the second, it was 5-3, Warick leading.

The stands were restive, and every now and again a bottle, generally of unbreakable plas, rained down from somewhere.

Absolute Magnitude

Von Baldur was with Goodnight in the skybox, on a com:

"Child Rowland, Child Rowland, this is Star Risk."

"Star Risk, this is Child Rowland," a distinctly cultured voice came.

"Child Rowland, what's your location?"

"Orbiting at, oh, three zed meters right over that great box of yours."

"Are you ready?"

"That's affirm. On your signal."

"Captain Hook, this is Star Risk."

"Hook here."

"Ready?"

"Ready, braced, strapped in, and will deploy on your signal."

"All stations, this is Star Risk. Stand by. Clear."

Third quarter, 8-5, still Warick's favor.

"Is everybody ready to move?" von Baldur asked into the Star Risk net. The other three, around the stadium, responded.

"Very well," von Baldur said. "Now, assuming that Warick holds its lead, they will assemble the team in the center of the stadium. The officials will present the winners with a trophy.

"At that time, we shall move."

"Clear."

"Understood."

"Will comply," came the responses.

Fourth quarter, two minutes left to play, Warick held the lead 10-6.

"I think we can make certain assumptions," von Baldur said. "It would appear that Warick has won the series."

"Looks like, Freddie," Goodnight agreed, staring out the skybox's window. "All we have to—holy flipping shit on a centrifuge!"

He was moving, out the door of the skybox, and von Baldur puzzled out after him for an instant.

Then he saw, from another skybox about a quarter around the top of the arena, three men bringing out lengths of steel, fitting them together into a framework with a rail in its center. Then they brought out a tube, let fins extrude, and put the rocket onto the rail.

A fourth man brought out a squat tripod, and crouched behind it, turning the sight on.

Goodnight dimly heard a great roar from the crowd as the last seconds ticked down, and he was running hard, pushing past people, but far, too far, from that skybox.

The officials were hurrying toward the field's center, where the Uniteds were nervously waiting.

Von Baldur was on his com:

"Captain Hook, this is Star Risk. Commence operation...now! Child Rowland...we are in trouble. Come in as soon as you can."

"This is Hook. On the way in."

"Child Rowland, beginning dive."

The stadium was a mele of fighting men and women. Goodnight heard a gunshot, then another, didn't know where they came from.

The man behind the rocket launcher was taking his time, making sure.

Goodnight's hand brushed his jaw, and the world around him slowed, and the noise rose in pitch.

Now the people around him were blurring, and he was darting through them, like a hummingbird through flowers.

The rocket man never even saw him as Goodnight cannoned into him, sending the sight crashing away.

But the man's finger was pressing the firing stud, and the rocket launched, smashing across the stadium and exploding in the middle of the crowd.

As the screams started, a Type VIII Heavy Lifter starship, a massive oblong carrying a large hook at the end of its drag hovered over the stadium. The hook reeled out and caught fast on the framework of the antigrav generators on the roof.

"Captain Hook," on the bridge of the Lifter Star Risk had chartered, ordered full power, and a 30° up angle. The ship, intended for the heaviest construction/demolition, barely strained as it tore away the stadium's roof in a ragged curl.

"This is Hook, Child Rowland. You got any problem with the sheet

metal?"

"That's a largish negatory. Coming in."

Goodnight came out of bester, saw the three rocket launcher men

gaping at him. One was reaching for a gun.

Goodnight's blaster was out, and crashing.

Three men pinwheeled, went down.

Goodnight put an additional round into the prostrate rocket aimer's head just to make sure, and was running, leaping, down the stadium steps.

Riss and King were already on the field, as von Baldur was half-way down the steps.

The stadium was filling with smoke and flame, and then the screams grew louder as an ex-Alliance heavy cruiser crashed through the hole in the roof, and came down, in a stately manner, toward the field, smashing everything blocking its way.

It filled the huge stadium from end to end.

A lock opened, and a ramp shot out.

Two men with blast rifles ran down the ramp, crouched, looking for a threat.

There was none. The mob was busy trampling itself, getting away from this sudden nightmare.

Jasmine and M'chel were pushing the seven referees toward the ramp, shouting at them.

Stunned, the striped men and women obeyed, stumbling up the ramp into the ship.

Grok came down the stairs, grabbed Freddie under one arm, back-handed a man waving a nail-studded club, heard his skull smash.

Goodnight was on the field, and the three reached the cruiser at the same time, pelting it into as the two guards came behind them, and the ramp and lock closed.

"Welcome aboard," the cultured voice said. "You're welcome to join me on the bridge. I do have a bill for you. A rather large one, I'm afraid."

"Not for me," Friedrich managed over his panting. "For the Professional Referees Association."

He looked at the shocked, gaping officials.

"They shall be delighted, nay thrilled, to add a 15, no 20% performance bonus to your fee."

"You said they were the generous type, Freddie. Bring 'em on up with you."

"We are on the way," von Baldur said. "I have a credit transfer to make, as well."

Chas, Jasmine and Grok were looking out of a port as the starship lifted out of the ruined stadium.

"As you said, Chas," Grok murmured. "Mess with our Jasmine, will they?"

Goodnight managed an exhausted smile.

"Jasmine, buy me a steak, hey? I need some stimulation, and this tub's gotta have a mess somewhere."

"Provided you don't get ideas," King said.

They started out of the lock area.

Riss took one more look back down at Warick.

"It isn't winning," she said, thinking of the million-plus credits.

"It's how the game is played."

The End



Book Reviews

Reviews by Mike Jones

Wild Cards: Deuces Down, edited by George R.R. Martin iBooks, 325 pages, \$23.00 ISBN 0-7434-4305-8

After a significant hiatus, the popular *Wild Cards* series of shared-world anthologies and novels returns, with an all-new collection of tales drawn from the sixty-year history of a world gone mad. In 1946, an alien virus is released over New York City, killing the vast majority of those it infects, and transforming the rest either into hideously deformed beings (Jokers), or super powered people (Aces). However, a third category has long fallen between the cracks: those whose deformities or powers are so mild as to make them near-inconsequential, people known as Deuces. For the first time, they're getting the spotlight, as some of the authors best associated with the *Wild Cards* series reveal the cards up their sleeves.

Michael Cassutt tells the untold story of the first men on the moon, John J. Miller looks at a World Series that never was, Walton Simons looks at the great New York blackout of 1977, Melinda M. Snodgrass approaches the subject of a centaur in Hollywood, Daniel Abraham addresses the matter of faith in a world gone insane, Steven Leigh takes us to Ireland for a look at a modern-day leper colony, and Kevin Andrew Murphy asks what happens when you lose the one thing your powers depend upon.

For those who were already fans of the *Wild Cards* series, this will be a welcome treat, delivering the same complex stories as before (with a more upbeat tone to them!). For newcomers, this is the perfect jumping-on point, as it's kept relatively free from past continuity, and explains the premise succinctly enough.

Adventures in Time and Space with Max Merrifield, by Pat Murphy Tor, 286 pages, \$24.95 ISBN: 0-312-86643-7

Identity and metafiction come head-to-head in this complex capstone to an audacious literary experiment perpetrated by Pat Murphy in this book. In two previous books, *Wild Angel* and *There and Back Again*, she laid down the groundwork for the concept of multiple layers of pseudonyms; now she brings it all together in a boundaries-crossing quantum-inspired mystery. Author Max Merrifield, himself one of Pat Murphy's pseudonyms, is on his yearly cruise while he works on several

books (namely, the two named above). However, when Mary Maxwell and Weldon Merrimax, his own pseudonyms come to life aboard the ship, it's up to Max and his new friend, Susan Galina (and her friend, Pat Murphy), to unravel the mystery before anyone gets hurt. As the ship travels into the Bermuda Triangle, things get seriously weird, lines blurring and genres breaking down. Before it's all over, Max's nature will come into question, and reality itself will be thrown for a loop.

This isn't an easy book to read, or a simple concept to follow. Rather, it's quite daring, both clever and challenging. Taken in concert with the previous books, it puts a whole new spin on what can and can't be done with the genre, and the nature of identity and perception versus reality.

For those needing more background, go to www.brazenhussies.net/murphy.

Stark's Crusade, by John G. Hemry Ace, 262 pages, \$5.99 ISBN 0-441-00915-8

John Hemry concludes his exciting trilogy about Sergeant Ethan Stark, a man betrayed by his superiors and forced to go against the very system he stands for in order to do what's right. He and the rest of the American forces on the Moon have successfully revolted against the military hierarchy and declared independence. Now they, and the civilians of the lunar colony, must work together or be destroyed by the numerous forces that want them back in line. Can the civilians and the military trust each other long enough to fight a war against the world that spawned them? Or will one side crack? If they can only last long enough, maybe Stark will save his people from the inevitable retribution, and make a change in the system.

Hemry has combined a keen sense of action with a fine look at the morality of following orders, and produced a groundbreaking story in the same vein as *The Forever War* or *Starship Troopers*. This is military science fiction as I've come to enjoy it, and I look forward to more from this author.

A Just Determination, by John G. Hemry Ace, 259 pages, \$6.50 ISBN 0-441-01052-0

Ensign Paul Sinclair has just been assigned to the USS *Michaelson*, his first posting as an officer. Armed with several years of Academy training and specialized schooling, he's sur-

prised when his lone legal course qualifies him to be the ship's legal officer, a role he's none too eager to play. He's got enough on his plate as it is, trying to get the hang of things aboard ship in the Navy of the future, without trying to worry out legal ramifications for complex situations. And a very complex situation's been dropped into his lap, when the *Michaelson* is ordered to patrol American interests in space, and to enforce the sovereignty of said interests, doing whatever it takes. With disturbingly vague orders comes a disturbingly vague ship's captain, Pete Wakeman, whose mental stability seems to be in question.

After the unthinkable occurs, and the *Michaelson* fires upon, and destroys a civilian research ship belonging to another country, Paul is forced to put everything he knows and believes into perspective. The *Michaelson* is recalled home, Wakeman to stand trial for his actions as captain, and Ensign Sinclair must decide what version of the truth to go with. His testimony could do more than help the captain he doesn't trust, it could make or break his career as well. But going with his heart may cost him all of that.

The characters, situations, and moral dilemma all reminded me strongly of a Heinlein juvenile, such as *Space Cadet*, or even William Forschten's more recent *Star Voyager Academy* series. It's almost deceptively simple on the surface, but the further you dig, the more there is to consider. Clearly the first in a new series, *A Just Determination* is proof that Hemry's an author to keep an eye on.

Fallen Angels, by Lyda Morehouse Roc, 340 pages, \$6.99 ISBN: 0-451-45879-6

In this sequel to *Archangel Protocol*, Lyda Morehouse takes another look at a future society forever transformed after a disastrous war. Religion has taken hold in a serious way; either you believe, or you're a non-citizen. Now, the world's only known Artificial Intelligences are about to be tested for something new: a soul. Inquisitor Emmaline, author of the elite forces of the Church, has been assigned to track down the two known A.I.s and determine once and for all where they stand on the matter. However, a stumbling block appears in the form of Morningstar, who may actually be the Biblical Lucifer, who certainly intends to bring about the end of the world with the Apocalypse. Between Emmaline and

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Morningstar, where will Page, an A.I. seek-ing Mecca, go?

Science fiction and theology are always a rare, uncomfortable mix unless done just right. Luckily, Morehouse pulls off the attempt, bringing together the disparate elements in an exciting, provocative story that's sure to entertain. This is a setting ripe with potential, and she's barely scratched the surface.

Technogenesis, by Syne Mitchell Roc, 326 pages, \$6.99 ISBN 0-451-45864-8

Syne Mitchell's second book takes us to the near future, where society has evolved and rarefied until everything that matters takes place on the Net. People are almost permanently connected by various technological means, rendering privacy obsolete. They're bombarded by information, advertisements, messages, entertainment, constantly. So what happens when someone is cut off from that society? That's the question answered by expert data miner Jasmine Reese. When her equipment fails, she's unexpectedly left stranded in a world no longer welcoming of the disconnected. Then she receives an ominous message, regarding something known as "The Beast." Now she's caught up in a bizarre conspiracy, sent to investigate the potential existence of a dangerous Artificial Intelligence, manipulated into infiltrating a dangerous organization. What she does could change the world...or destroy civilization. But does she have the right, or the knowledge, to make the choice? Intriguing and surprising, *Technogenesis* is another pleasing offering from a relatively new author.

Hominids, by Robert J. Sawyer Tor, 444 pages, \$25.95 ISBN 0-312-87692-0

Acclaimed author Robert Sawyer begins a daring new trilogy with this tale of overlapping alternate histories. When a quantum-computing experiment in one world meets a neutrino observation post in another, things go horribly wrong. Scientist Ponter Bodbit is thrust into our world, and stranded. The problem? In his world, Neanderthal man survived to form a near-idyllic society, quite different from ours. Now he has to come to terms with a new world, while his partner back home is accused of Ponter's murder. Geneticist Mary Vaughn is just one of several experts who will first verify the impossibility of Ponter's existence, and help him to adjust. But only if they can crack the barrier between worlds open again, will everything be fine. One thing is certain: neither world will ever be the same again, once a mutual existence is revealed. Sawyer once again delivers cutting-edge science and believable characterization in one

of his best books to date.

Humans, by Robert J. Sawyer Tor, 382 pages, \$24.95 ISBN 0-312-87691-2

The second book of Robert Sawyer's *Neanderthal Parallax* trilogy, *Humans*, continues the story begun in *Hominids*. Neanderthal Ponter Bodbit's returned to his own dimension, but his thoughts continually bring him back to the strange world where his race didn't survive the evolutionary race. More importantly, he can't stop thinking about Mary Vaughn, the human geneticist who befriended him and taught him all about her world. Before long, he's engineered the reopening of the dimensional tunnel, and again traveled to Mary's world. But are the two separate worlds really ready to deal with each other? While Ponter and Mary struggle to forge a relationship despite the differences in race and world, their colleagues attempt to forge a new sort of cultural understanding despite violent opposition. And then, when things are at their best, a frightening discovery is made about the world's magnetic field, and two universes are put into perspective. Is the end of the world at hand?

By far, the most interesting aspect of this trilogy is Sawyer's examination of our own world through the eyes of an outsider. His perspective on war, religion, and society comes off as disturbingly true, removing some of the happy illusions we form about ourselves. As science fiction and social commentary, *Humans* comes off quite well, though Ponter Bodbit's world still seems optimistically utopian by comparison to our own and thus hard to believe in unquestioningly. Luckily, strong characterization and an interesting storyline keep things moving enough to overlook that flaw.

When The Devil Dances, by John Ringo Baen, 504 pages, \$25.00, ISBN: 0-743473540-0

In the third book of John Ringo's exciting series, the stakes have been raised once again. The alien Posleen have been on Earth for five years now, and we're losing, badly. Civilization is down to a few scattered pockets in the mountains, and the remnants of North America. However, we're fighting back tooth and claw, determined to make their victory a costly one. Luckily, we've got alien technology of our own, plus sheer human stubbornness, on our side. Between dirty guerrilla warfare, powered battlesuits, and mountain-sized mobile artillery, the remaining humans will do anything to make the Posleen miserable. Unfortunately, they're getting smarter the longer they deal with us. It's up to Major

Michael O'Neal, as well as the amnesiac intelligence officer Anne Elgars, and Sergeant Major Mosovich to mount resistance where they can. And to die holding the line in the worst-case scenario. It may not be enough, but they won't go down easily.

John Ringo has really pulled out all the stops in this book, guaranteeing that however the series winds up, it'll do so with a conclusive bang. The ideas keep getting bigger, the battles more desperate, and the payoff more rewarding. The only drawback is that it flows better as a series than as individual books, with long sequences devoted to certain characters while others nearly vanish for much of the book. Overall though, this is a great representative of military science fiction, and a series worth looking at.

Hell's Faire, by John Ringo Baen, 320 pages, \$25.00 ISBN 0-7434-3604-0

John Ringo brings to a close the first part of his *Legacy of the Aldenata* series with *Hell's Faire*. Originally intended to be the final part of *When the Devil Dances*, the material in this book was delayed due to the events of 9/11, turning what was supposed to be a trilogy into a four book series. Luckily, *Hell's Faire* doesn't suffer for being forced to stand on its own; Ringo does a good job of recapping previous material and bringing readers up to speed.

As in the previous books, the alien race known as the Posleen are tearing apart Earth, and the only true organized resistance remaining is in America. The Appalachians are a blazing warzone as the best and brightest of the Posleen forces match their overwhelming numbers and technology against the cunning and do-or-die attitude of a bunch of humans. Michael O'Neal and his daughter Cally, Sergeant Major Mosovich, and the intrepid crew of SheVa Nine (nicknamed BunBun) are at the forefront of the last great push to save the world. It's all-out action, huge explosions, massive ground battles and violent desperation, and when it's all over, either the Posleen get Earth, or they get their tails handed to them.

Ringo's a great new voice in the military science fiction field, willing to think big and throw out some audacious concepts in the doing. While this is the last we'll see of this particular series for a while, I'm looking forward to whatever he does next.

Impact Parameter, by Geoffrey A. Landis Golden Gryphon Press, 340 pages, \$24.95 ISBN 1-930846-06-1

The first collection of Geoffrey Landis' short stories, *Impact Parameter* features some

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of the very best work by the award-winning author. The stories mix keen characterization, hard science, humor, and boundary-defying concepts, demonstrating why Landis has received so much attention for his work. Included is his Hugo-winning "A Walk in the Sun," in which a man must keep moving or perish on the Moon. There's the bizarre trip through a black hole, an unusual Sherlock Holmes story, a virtual-reality war, and of course, "What We Really Do Here at NASA." It's true; it's a tough job.

Judging by the contents of this collection, Landis is one of those authors who will define science fiction in the years to come, unafraid to push the envelope and really explore those outer limits. His first novel, *Mars Crossing*, was excellent, but in these stories, his true range shines brightly. The only drawback is that this book was released by a small press, and may be hard to find.

The Better Part of Valor, by Tanya Huff
DAW, 411 pages, \$6.99 ISBN 0-7564-0062-7.

Staff Sergeant Torin Kerr's reward for surviving a near-catastrophic situation while keeping her people and her civilian charges alive is reassignment, a fact that doesn't please her in the least. Maybe she shouldn't have told the general who got her into the mess what she thought of him. Now she and a ragtag group of soldiers drawn from all over the Confederation have been sent to investigate a massive derelict spaceship of unknown origins. But is the real danger the ship in question, or is it the publicity-hungry commanding officer and the media following him, or is it one of the scientists sent to study the spaceship? Any way you look at it, she'll have her hands full trying to stay alive and keep her men together this time. Not everyone is coming home from this mission. Once again, Tanya Huff produces another enjoyable book, proving that her talents, normally reserved for fantasy, lend themselves quite well to science fiction. With the *Valor* series, she's clearly hitting her stride.

Reviews by Joe Lazzaro

On The Road with Ellison, Volume One, by Harlan Ellison, Deep Shag Records, \$13.99

On The Road With Ellison is a CD audio collection of some of Harlan Ellison's memorable speaking engagements, and shows that the man can do much more than write riveting stories. In the spirit of George Carlin and Lennie Bruce, Ellison holds the crowd in the palm of his hand, and flings them across the room with uncensored tales of his hard-knocks experiences as a citizen and storyteller. Originally released on vinyl in 1983, the collection includes tales that will have you playing the

CD over and over. The CD lays bare the defiant spirit of the man, as well as his deep humanity. The anthology includes such stories about how Ellison taught a lesson to an arrogant and stupid publisher, to heartwarming off-the-cuff conversations with little children playing in the park. Ellison reminds me of Lennie Bruce and George Carlin, and could earn a living as a stand-up comedian or storyteller. The performances are highly caffeinated, and are peppered with animated and authentic impressions. But this isn't just another disk filled with off-color commentary. Ellison discusses such themes as the prevention of nuclear war, and the plight of people ignored by their governments, and does it with a force of will that will make even the faint hearted sit up and take notice. If you're an Ellison fan, you'll want this one for your collection!

The Nine Billion Names of God and Other Stories, Arthur C. Clarke, Unabridged, Fantastic Audio \$32.00, ISBN 1-57453-447-5

"The Nine Billion Names of God and Other Stories" comes from one of the genuine grand masters of the science fiction field, and includes six audio cassette tapes. The first story in the anthology, *Superiority*, is a classic, and is an excellent illustration of how technology can get out of hand when fighting a war. The story shows how engineers can turn reliable technology into a nightmare when trying to optimize and improve weapons systems, and was inspired by the German V2 rocket program during World War II. *Superiority* shows how technology gone a rye caused a powerful empire to sap its resources and lose a war that they were winning from the outset. *Superiority* was used in the MIT engineering curriculum to demonstrate to future engineers that "the better is often the enemy of the good."

The title story portrays the efforts of two IBM engineers hired by a Tibetan monastery to rapidly compile a list of the nine billion names of god using a computer. The monetary has been working on the project for 300 years, and has estimated that it will take another 15000 years to complete, hence their need for a computer to speed up the process. According to their religious teachings, once all the names of god have been revealed, mankind will have fulfilled its purpose, and the universe will come to an abrupt end. "Encounter In The Dawn" is another classic from Clarke, and belongs to the *2001 A Space Odyssey* universe. This story tells the tale of advanced aliens who visited Earth in prehistoric times, nudging our species towards civilization and intelligence. I particularly enjoyed "Arms Race," a humorous short that describes the

plight of a prop designer working on sci fi movies when one of his ray guns actually works, and blows a hole through the studio. If you like old wave Clarke, you'll enjoy this anthology.

The Voice from the Edge and Midnight in the Sunken Cathedral, by Harlan Ellison
Fantastic Audio, \$25.00, 1-57453-412-2

Midnight In the Sunken Cathedral is an audio anthology, powerfully narrated by the author Harlan Ellison, and comes on six audio cassette tapes. The first story, "In Lonely Lands," is a thoughtful tale about a blind spacer who returns to Mars in order to die, and the loyalty of an alien content just to be his friend. "The Ending of the Time of Leinard" tells the sad story of a small town sheriff who has outlived his usefulness after bringing law and order to a town who is now embarrassed by the gunslinger lawman. "Pennies Off A Dead Man's Eyes" is a tale of loyalty, life and death, told from the point of view of a drifter, and is classic Ellison! The title story, "Midnight In the Sunken Cathedral," is a hallucinogenic yarn involving the Bermuda Triangle, lost Atlantis, the fuzzy line between life and death, and the endless yearning of a son for his deceased father. "Rat Hater" is a violent story about revenge. The piece plays out in a waterfront warehouse, as one man carries out his brutal revenge against a former mobster who murdered his sister 18 years ago. The anthology oozes with Ellisons range as a writer, a man who has seen and done it all before, capturing life itself in sizzling pros and dialog.

Reviews by John Deakins

Bones of the Earth by Michael Stanwick, EOS/HarperCollins, 335 pages, \$25.95 ISBN: 0-380-97836-9

Humans have received a frightening, conditional gift: time travel. If, however, they can't resist creating time paradoxes, the gift will be instantly erased by their future aliens benefactors. Transferring information to your past is forbidden. A kind of "paradox police" enforce the prohibition against changing any established human past.

Paleontologists, brought secretly into the system, can now study living dinosaurs, no longer limited to the "bones of the earth." They can, that is, if they can deal with science's human side and stay square with director Griffin's guidelines about what must happen.

Scientist Richard Leyster and iconoclast Gertrude Salley battle the system, their "field work's" real dangers, and their own love/hate relationship. Stranded in the Cretaceous,

Absolute Magnitude

Leyster unknowingly survives two versions of the same disaster, altered when Salley creates a forbidden diversion of her younger self from the expedition.

This isn't a book about dinosaurs. (But it is a wonderful book about dinosaurs!) This isn't a love story, but there are several convoluted ones, woven in altered time. (The few sex scenes are physical and erotic.)

This is a book about the morality of science. Just what would a scientist do to be able to unwrap his field's mysteries, hands on? The answer is "anything." That theme is both the beauty and the tragedy revealed by this work. Desired knowledge is the ultimate aphrodisiac, the drug with the highest "high." Push the knowledge boundaries until they break! The fact that real people live and love, suffer and die along the way is secondary.

Stanwick's book is a page-turner and a mind-stretcher. The poignancy of the complex ending may slip past some readers. It's only weakness is its (unnecessary) set of villains. Once again, the Crazed Christian Conservative Fundamentalists are plotting against the Heroes of Science. Every complication caused by the anti-science plotters could as well have been produced by technology failure, but that would have denied Stanwick a chance to preach.

This is one of those books that keeps you up at night. Enjoy.

Excalibur Alternative by David Weber Baen Books, 313 pages, \$21.00 ISBN: 0-671-31860-8

This book needed to acknowledge its predecessors a trifle more. Though more serious, it resembles Poul Anderson's *The High Crusade*, with just a touch of *Turtledove and Brin*. Its spirit is like Pournelle's "Janissaries" series. Its shorter form appeared as a novella in David Drake's *Foreign Legions*, but I could find no direct admission that it is set in the same universe as Drake's own *Ranks of Bronze*.

In *Ranks of Bronze*, aliens purchased a "primitive" Roman legion to fight their battles for trade concessions on various undeveloped worlds, where advanced weaponry was forbidden. After centuries of warfare and abuse, the Romans hijacked their transport and fled back to (a future) Earth. The final chapters of *Excalibur Alternative* transpire on that Earth, and its story-line is a parallel chapter in the same saga.

Medieval soldiers bound for embattled, fourteenth-century France are rescued from certain drowning by competing alien merchants. Led by Sir George Winchester, English knights, men-at-arms, and longbowmen must

repeatedly conquer alien armies or see themselves (and their families) discarded as worthless tools. They succeed, but Englishmen make poor slaves. The book chronicles their battle, their bitter survival, and finally their escape. The soldiers' recognition of the rights of other sentients is key to their success.

The ending trumpets humanity's innate tenacity, like the stories of Eric Frank Russell used to.

Except for its lack of adequately acknowledging its roots, this is one fine book. I finished it in two days (and two late nights), when I could have been more gainfully employed. It makes the reader want to start looking for more of David Weber's work. For the military history SF fan, this book will be familiar ground, but it is mighty good ground. I highly recommend it.

Hamlet Dreams by Jennifer Barlow AardWolf Press, 219 pages, \$13.95 ISBN: 0-9706225-1-1

This fantasy's title alludes to Hamlet's soliloquy: "To sleep, perchance To dream . . ." Ultimately, its themes are seduction overcoming love and love overcoming seduction.

Zac, always able to retreat into his dreamland Other Place, finds himself yanked into it forcefully. First, the merest doze launches him into dreams, and soon he is kidnapped from waking reality by the dreamscape's owner. His selfish guide seems to be a succubus with her own agenda. Ultimately, however, she is more an aspect of Hades himself, bent on seducing Zac to become a launch window into our own world.

Meanwhile, Zac's troubled, virginal fiancee, Cecile, must deal with haunting past abuse, Zac's assertive brother, and a hospitalized, comatose Zac. A handsome stranger repeatedly intervenes, drawing her ever further into his own seductive web. Her conquest by the incubus is a complex power-game. He uses her rotten supervisor, the terror of her abusive, stalking stepfather; and even the murder of her best friend to deflower her. Once each - incubus and succubus - have achieved the goal of corrupting their target, only a small step remains to use them as a door to this reality. Can the love Zac and Cecile bear each other overcome their personal degradation, enough to forgive and still hold fast?

Mmmmm, could be. Read for yourself.

The writing in *Hamlet Dreams* is, for the most part, very good. Despite the literary references to classical mythology, there is just enough feel of a Harlequin bodice-ripper romance to make the fantasy purist uneasy. The book is mildly erotic, like an R-rated movie that has been touched up for cable. The ques-

tions asked by the ending are deep and significant, but some readers would feel better more clear-cut answers had been provided.

The book is a "fast read" and worth the effort.

The Dawn of Amber by John Gregory Betancourt iBooks, 299 pages, \$24.00 ISBN: 0-7434-5240-2

Get it out of the way up front: John Gregory Betancourt is not Roger Zelazny. Every fan of Zelazny's ten-volume "Amber" series will be offended by the idea that anyone could step into the SF giant's shoes. Equally, every Amber fan will be irresistibly drawn to this book. Zelazny left us hungry for more - the mark of a truly great writer.

Put your prejudices aside. Betancourt has produced a highly readable book, exactly what you'd expect from a professional with over twenty novels behind him. This prequel trilogy will follow Oberon, the founder of Amber and all its Shadows. Oberon's father, Dworkin, and his relatives form the Courts of Chaos, empowered by the mystical/genetic pattern of power, the Logrus. That complex, unhappy family long ago exiled Dworkin to the numberless parallel Shadows of Chaos. Now, some Chaos noble means to exterminate Dworkin's entire line. Oberon, Dworkin's unacknowledged son, becomes a target in his own Shadow, and must be snatched to Juniper, Dworkin's personal remote Shadow.

There he meets the survivors among his own conniving siblings, each able to master aspects of the Logrus. Oberon's own internal copy of the pattern has been distorted by genetic drift into a new form. He cannot master the Logrus, but he is himself a new Pattern.

With Juniper under new attack, Oberon must cooperate with his relatives, but one among them is a traitor. They has been cut off from all Shadows and Chaos itself, even using the Logrus-powered Trumps, "cards" with magical scrying and transport abilities.

Betancourt has tied his "new" world system strongly to Zelazny's own. The Trumps and the Patterns begin to make more sense, but still include mysteries. Good news: This novel gets better the farther you get into it. Better news: At the end, you will be ready for more. No, Betancourt is not Zelazny, and he is camping in Zelazny's universe, but he is a fine writer. Put this one on the shelf beside *Nine Princes in Amber* without hesitation, and leave space for two more.



Deadbeat

by John W. Randal

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Janx smiled and rubbed one blunt finger against the shallow cut in his thigh — hard, repetitively. Until the wound was leaking nicely.

The itchy-sweet pain was a good mask; it blocked the deadbeat. Through the link, Janx could feel the beautiful bodies of his joeys writhing in pleasure at the shared sensation.

He grinned, licked black-painted lips, and shifted his moist grip to the thick butt of the gun.

Around him, the dark and ruined cavity of the shattered building stretched up and away into arching gloom.

The two joeys (all bunched muscle, stiletto claws, and fist-sized wet black eyes) had preceded him into the broken, four-story structure. Now the creatures fanned out to his left and right — sniffing, probing. Janx sampled their night-vision in quick, orgasmic bursts, getting a wide-angle view of his surroundings.

He could almost *taste* the revenant. It was one of the last ones. Janx's grin expanded; Tower would *love* him for this. Slowly turning his head from side to side, Janx carefully scanned the area.

Here, on the ground floor, the air was filled with the rich, meaty stench of rot. Half of the narrow building's roof had been blown away in some long forgotten catastrophe. And now the soiled rain that fell so incessantly had dripped down through the structure like oily blood running from a head wound. The dark moisture sagged and buckled the upper floors and finally collected here in the guts of the building.

Some of the more wickedly twisted forms of fungi growing around the turgid puddles spattered here and there were quite attractive. The distorted mushrooms even emitted a delicate, pasty-gray illumination.

Janx inhaled deeply. The aroma was also interesting — once you got used to it. Janx got used to it fast, and started to enjoy it. The joeys clicked their spiny teeth at the luscious feedback.

Chipped brick clinked against broken tile.

Janx picked it up immediately from the audio chips in his ears and the excited sendings of the joeys. They triangulated, re-checked, fixed position.

Three floors up, seventeen meters to the left of his current location.

A quick mental command sent both joeys into motion. One vanished through a gaping hole in a nearby wall. The other slipped fluidly up a rickety staircase.

Janx watched the faint, attenuated shadow of the second joey follow the hunched creature up the stairs, into unknown gloom.

He smiled, caressed the gun, and rubbed his self-inflicted thigh wound again for good luck — and for fun. He was the *best*. No doubt

about it.

Moving over the moldering piles of debris slowly being digested down here in the belly of the building, Janx almost giggled at the thought of Baxter.

He rubbed his leg — *hard*, had to keep that pain up. If the revenant's empathetic ability slipped under Janx's pain-mask, the creature would deadbeat him. Slick as wet silk.

Don't get stupid, Janx told himself. And he dug his fingernails in. It felt shivery-good.

Still ... Baxter. *What a scene!*

Janx smiled. Rubbed.

Vennis had thought the gag up, that yummy sleaze. She was always coming up with wild twists to pass time on their shift. Some of her "jokes" were so kinked that Janx could barely follow them. The razor-thin worian practically *breathed* sarcasm. But Janx had been the one to get her the *sizz* for this gag.

Baxter was young, and puppy-dog eager in his hero worship of Janx. The admiration wasn't unfounded. Everyone knew that Janx was clearly among the top ten Force officers, at the very least. Everyone knew it.

State Force Headquarters, known as the Clave, was nestled in the arousingly fitid shade cast by Edward Tower's nearby command building. The Clave was a tough, beetle-like dome, filled day and night with taut activity. The State was big and wild. It needed *sharp* police.

All of the top snuffers and burn-queens worked out of the Clave's rust-wreathed hemisphere. They grew the joeys there, and interfaced with Tower on (among other more mundane tasks) the Statewide revenant removal plan.

Good work, good pay — nasty-nice perks.

And Janx was top line. He'd worked the nights for five long years. It wasn't a glory shift, but it made you sharp. Few Force officers could touch Janx on seniority — even fewer on skill. When Baxter had been admitted into the Force, Vennis had pointed the kid toward Janx as a role model. Janx got off

on that. Big time. So he took Baxter as a partner, nobly suffered the constant questions and adulation, and parceled out bits of wisdom to the kid.

But playing hero did get straining from time to time.

So when Vennis had thought up the gag, Janx rushed hot on the idea of giving perky little Baxter a bit of sting.

Janx had bought the *sizz* from a pathetic cox-head down in the Clave catacombs. The scrawny teen-age girl could barely stop drooling long enough to close the deal.

Reflecting on the purchase, Janx decided that he would go back



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and burn her when he finished here with the revenant. Just on general principles.

Vennis had slipped the *sizz* into Baxter's juice, and all the snuffers and burn-queens not out on assignment had gathered nonchalantly in the ready room. Waiting.

The spunky goof didn't realize anything was up, even after drinking several big gulps.

Baxter was prattling on to Janx about his wife and new child (with shoddy ink-jet likenesses and all) when the creamy foam started to funnel out of his nose.

Janx and the others had howled at the startled kid. Their mirth increased as the drug rea-ly kicked in and Baxter started staggering, sneezing, and laughing in delirium. He looked like a defective fire extinguisher.

He must really have been virgin to *sizz*, though. Because Baxter kept right on laughing, even when the foam gushing from his nose started to get pink — and then deep red.

The box-head must've gotten the mix wrong, is what Janx figured. That's why he was going to waste her after he finished here.

It could've been a perfectly good gag, and she'd ruined it by mixing the *sizz* wrong and killing the stupid kid.

Janx still remembered Baxter's startled face looking up at him from the black and crimson puddle on the ready room floor. Yeah, the box-head was definitely dead skin.

Wastes like that shoudn't be sucking air anyway.

Janx stepped over a broken timber and ducked under a deeply sagging section of ceiling.

It had been kind of funny, though.

Janx rubbed his thigh hard — if this mirth kept up he'd have to give himself another cut.

As Janx moved up through the jagged disemboweled interior of the building, he noticed some blood-red graffiti. Sprayed upon a pale, stained section of wall by a passing vagrant were the words: LA MAISON DE DIEU. The letters had run like wounds — nice effect, thought Janx. The House of God. He flashed his teeth.

Oh yeah...

A packed gasp of sensation spirited through the link from one of the joey's, directly into Janx's mind. The image was a quick blur of tidal motion, followed by a sudden snap of pain, like a tree being split by lightning. Then it ended.

Janx tried to re-establish the link to that joey. Couldn't. His feed-back frustration agitated the remaining creature. Janx could feel it spitting and flexing its foot-long claws in the crumbling plaster of an upstairs wall. He swung the joey out through a shattered window. Moved it up the outside of the building.

Janx jogged rapidly up the stairs, a stinging fury sizzling in his shaved head.

This call had come in at the tail-end of his shift — the beginning of Baxter's, actually. Janx didn't have to take it. But Janx was the best, and he would be damned if he let one of O's last revenants slip through his fingers.

One floor. Two.

Janx felt like a black-suited maggot crawling up inside the shattered carcass of some great dead beast. He tried the first joey again. Nothing.

Janx hit the top floor, his teeth bared, and rolled into a pretty smooth level five evasive. The space was wide and darkly open. Shattered wood, metal, and plaster were strewn all around the sagging floor. Jagged shadows hung like tattered shrouds.

Finding cover, Janx squeezed low, his eye-chips giving him multi-spectral images of the area. Roving tactical grids superimposed themselves over the images, seeking targets.

Nothing.

Janx's eyes narrowed. He moved his remaining joey slowly up the outer wall of the building, feeling the thing's engineered muscles smoothly flexing as it cl mbed. Slaved to his nervous system, the gun in Janx's hand cycled through projectile choices and energy settings, aching to fire.

The pain from his thigh wound and Janx's excitement kept any hint of a deadbeat away from him. *Where?* Janx questioned with his entire body ... straining, seeking.

Cool wind swirled around the body of the joey, clinging to the outside of the building. The creature paid the night air no mind, focused instead upon finding the revenant for Janx. Its sensitive nostrils quivered wetly, sniffing at holes in the brick.

O was almost finished. Under Tower's guidance, the State Force had steadily snuffed each of O's revenants, one by one. Only a few remained. When they were dead, O would finally be out of the picture. No more surprise political come-backs. The perks then lavished upon the Force officer with the most revenant kills would, assuredly, be extreme.

Janx's tongue flicked out of his mouth, tasting pheromones. The tactical display in his eyes locked and identified the torn and dripping body of his first joey. It was crumpled among a pile of sodden bricks.

Janx bared his teeth again. It was the first joey he'd lost in over three years. Anger swirled in his blood.

This was supposed to be Baxter's route. If that loser hadn't hemorrhaged in the ready room, Janx wouldn't have stayed late and picked up the call. Still, the extra kill would look very good on Janx's record. He was going to get ripped by the other officers for the loss of the joey, though.

Where the hell was the revenant?

Quick movement in the shadows, far left corner.

Janx swirled up, firing three of his gun's asymmetrically clustered barrels: hot tags, followed by Wasps and a laser pulse. The tinted phosphor tags pitted the far wall with a constellation of flaring buds, washed across an intervening pillar, spotting its crumbling brick with dots of bright light, and streaked into a pile of debris pursuing the running form of the revenant.

The laser hummed twice, invisibly burning smooth holes through bricks and twisted metal girders. The Wasps buzzed out of the gun in wide arcs, sweeping inward toward the blurred form of the revenant.

The laser, hot tags, and two of the Wasps missed.

The third Wasp thunked wetly into the revenant's ankle and buzzed, burrowing. Janx heard the choked gasp, smelled the flare of blood. He grimmed. The aggravation over losing a joey and the pain in his thigh forgotten.

Janx stood, aiming the gun. The Clave supervisor could hoard promotions all he wanted — Janx was the *best*. With a mental flick, Janx sent his other joey swinging in through a gaping hole in the outer wall. The shiny black creature hit the floor in a hissing crouch, already locked onto the injured revenant.

Janx fired the gun and signaled the joey's attack. Good-bye, O, he gleefully thought to the revenant.

And the deadbeat swallowed Janx like a soft wet kiss.

The gun erupted, all six of its barrels spasitically firing as Janx fell forward. The implants in his body frantically fought the deadbeat, trying to keep Janx's nervous system from shutting itself off. The gun detonated over and over again.

Streaks and pops of searing light spurted through the upper floor of the building. Supporting pillars were cut out like reeds. Portions of the buckling floor shredded away under a hail of spinning green disks. Man-sized chunks of wall were punched out into the night air, flashing instantly into magma.

Still falling, Janx convulsed and cut his last joey in half with a sweep of the laser. Screaming body-detonators finished the rest of the beast.

Janx hit the ground. His gun spun away, still jerkily firing. A large section of tattered roof tore away, mushrooming up into the inky sky — and then came crashing back into the building. Collapsing upon Janx ...

And the deadbeat pulsed.

No longer blocked by the pain-mask, the telepathic resonance from the revenant swirled along Janx's nerves like a smooth tide of oil, slushing him down, turning him off.

The Clave implants shocked Janx's heart, forced his lungs to continue to breathe. Covered with burning rubble, Janx convulsed and

Absolute Magnitude

gagged, desperately fighting the deadbeat. Trying to hold on. Trying to focus on the pain — even though the deadbeat was firmly smoothing away all such traces. Everything was just black ... thick, measureless night. Time to let go. Let go ...

The Clave implants interfaced with Janx's pain centers and lit them up. Brightly. He arched under jagged bricks and wood, howling.

The deadbeat retreated, then surged back. The implants fired more pain, unending waves of it. Janx screamed himself dry.

The deadbeat melted sluggishly away.

And all was quiet.

Pain.

Pain ruled.

Janx convulsed a few more times and then thickly exhaled. Damage alerts flowed smoothly over the glowing grids, superimposed on his visual field. Other Clave implants pumped medical juices and amphetamines into Janx's veins. Repairs were started — but the pain was left unblanked. Janx needed it.

He could hear movement coming toward him, over the burning rubble.

The gun called pitifully out to Janx from somewhere nearby, but Janx's locator implant was damaged and he couldn't acquire the gun's exact position. *Bastard!* Janx thought. Yeah, keep coming. Come on over, finish me off.

Janx slowly raised his left arm, freeing the wrist launcher. He could smell the soft musk of the revenant: female. Janx grinned, blood lacing his pale teeth.

Come on, baby, get a taste. How's your ankle feel? My Wasp still buzzing ... still digging?

Closer.

Janx accessed the wrist launcher.

M190 ANTI PERSONNEL GRENADE: CRITICAL FAILURE

T27 FLASH AEROSOL: CRITICAL FAILURE

RD STINGERLINE: READY

Restrain and Disable would have to do — for now. The revenant was in range. Janx grinned wety and let the stingerline from his wrist launcher. The auto-tracking dart hissed out of the launcher, trailing its silvery line, and arched upward. It thunked into the approaching revenant, and Janx flashed a heavy load of electricity through the wire.

His enhanced ears caught the revenant's agonized gasp as she jerked to the shocks and fell onto sharp bricks.

Yes.

He was the best. Sure, he might've taken some in this call — but who didn't from time to time? And Janx was going to get this kill. No doubt about that.

Keeping the stingerline intact, Janx began to carefully extricate himself from the smoldering debris. About half a ton of brick and burning rubble had just fallen in on him, and he hurt, but he was feeling better. Second by second, as internal repairs proceeded, Janx felt better ... and better. Whenever he heard the revenant stir, he zapped her with more juice. And grinned.

How's that feel, O? How's it feel to die, what is it, one hundred and sixty-five times, so far? You should've resigned your shot at Governor a long time ago. Tower has *always* wanted it more than you.

And you haven't got that many ghosts left.

Janx slowly sat up; rubble slithered off his chest. Blood blurred his eyes for a moment, but Janx grinned anyway. Tower would surely reward this, maybe with a smooth position, higherup in State government.

O and Edward Tower had been contesting Governorship of the State for over two years now. You would've thought that O would've stayed dead after the first election.

But the sneaky bastard had replicated himself via a tailored virus. The revenant bug had infected a certain number of citizens before Tower had come up with an antidote. Victims of the virus had their minds and personalities rewritten with O's genetically coded essence. He took them over, possessed them, like some high-tech demon.

And O, in his new multiple form, carried on his run for Governor

— blessed now with the unexpected, but rapidly utilized, ability to empathically shut down the nervous systems of his opponents. Blessed with the deadbeat.

Janx stood, swaying. Blood loss had been stopped, but his body was torn and slashed through the smooth sheen of his black armor. A hair-thin line of pure silver trailed from the launcher on his left wrist. Janx flashed more juice through the stingerline and followed the shimmering thread down to where it terminated — in the lith, crumpled body of the female revenant.

Carefully moving closer, Janx winced at the multiple flares of pain from his wounds. But the grimace was sweet. He extruded razor-nails from the gloved fingertips of his right hand. Just a little swipe across her pale smooth throat, and another one of O's steadily dwindling supply of carriers would go.

Janx thought of Baxter. The rookie's death hadn't turned out to be much of an annoyance after all. If Baxter'd been alive, Janx would've missed this call. This revenant. Hell, this whole sector had been marked "cleared" of O's ghosts. Janx grinned. All in all, it was turning out to be a very lucky night for him.

He zapped the revenant again, just for good measure. Her lean body arched and quivered. She was wearing a violet bodysuit, and her hair, fanned out around her head, was metallic gold. Janx chuckled and flipped her over, onto her back, with his foot. He flexed his clawed right hand and leaned in, looking at the woman's face, now illuminated by the dying fires.

It was Baxter's wife.

Janx jerked back, startled despite himself. He reflexively shocked the revenant again, and her gold-painted lips stretched wide in a soundless gasp.

Impossible. The sniffers that roamed this sector had clearly tagged a revenant. Janx himself could smell the virus within her. She was a revenant.

She was also Baxter's wife. Janx had seen her picture, had seen her live, on the vid-sheet, crying, when the watch commander had informed her of Baxter's death hours ago. Yet here she was.

Janx was filled with righteous indignation. Baxter had to have known that his wife was a revenant. The rookie's implants would've tagged her just as swiftly as Janx's had. Which meant that the fresh-faced little bastard had been a *mole*.

Somehow, an O sympathizer had managed to infiltrate State Force ... and the Clave.

Janx roughly grabbed the lean woman. The razor-nails on his right hand cut effortlessly into her shoulder. "Wake your bitch up, O," Janx hissed. "How'd you manage this?" The woman's eyes rolled nervously beneath her partially closed lids. Janx flushed. He might've given her too much juice; maybe he'd fried her brains.

And Tower'd want this one *alive*.

Janx hauled the limp woman up to her feet and shook her. The razor-nails sunk in to touch bone. "WAKE UP!" he snapped. "How'd you get Baxter through the Clave profilers?"

In an almost panicky surge, Janx tried to access his COM chip. The hell with keeping the glory for this one to himself; he needed medical back-up for the revenant. The woman had to be questioned. O was notoriously afraid of pain. The Clave interrogators could make him talk — even in a revenanted state. But only if his host body was alive ...

COM SYSTEM FAILURE, WEST SECTOR, NODE 771.

REPAIRS UNDERWAY.

TIME-TO-UPLINK: 58 MIN.

Janx swore. It couldn't be a goddamn coincidence. COM failures happened, more and more it seemed, but not just *now*. It was just too damn sweet.

Did O have confederates in the COM net?

"WAKE UP!" Janx roared, shaking the female like a rag doll. Her lips and golden-haired head flopped loosely. Then her right palm came up and slapped against Janx's stomach.

There was an explosion.

Blown halfway across the tattered room by the detonation, Janx coughed bright blood.

Deadbeat

Palm gun.

Janx grimaced, stunned. *I never saw it coming*, he thought. He rapidly blinked his eyes, luminous words floating serenely over his visual field:

LEVEL 9 PROJECTILE WOUND: UPPER LEFT ABDOMEN.
INTERNAL DAMAGE ASSESSMENT: CRITICAL.

— Syslm Interrupt:
[Initiating Emergency Medical Assist call ...]

— Syslm Interrupt:
[COM system failure. Unable to process EMA call. CRITICAL wound assessment. Seek immediate medical assistance ...]

Janx coughed again and tried to sit up. His arms waved jerkily. Looking down at himself, Janx saw that his stomach was covered in blood ... blood that originated from a smoking hole in his armor as big as his fist. He stared in amazement. Level 9 — full penetration. Janx spat thick warmth. He couldn't move his legs. How the hell had this happened?

Shaky footsteps clattered in the rubble. Janx looked to his left wrist, where the broken end of the stingerline trailed uselessly.

The revenant walked unsteadily out of the dripping gloom, her thin face pale. Janx flexed the razor-nails on his right hand.

The hell with this; I'll kill her, he thought. Just a little closer and I'll rip her infected heart out — forget the interrogation!

With thick liquid clotting his throat, Janx snarled, "I—I've called in a hack-up team." Blood overflowed his lips. "You're not getting out of here." Janx gave a hulking laugh.

The revenant stopped. Janx was pleased to see that she was bleeding from her shoulder and ankle — though he couldn't hear the whine of his Wasp, so the thing must've stopped burrowing.

Janx grinned, his teeth red. *Yeah, get an eye-full. I'm still here.*

Then she spoke:

"They've taken down your COM system in this sector. You haven't called anybody." The revenant ran a slender hand over her eyes. "This was my husband's route. And there are no WatchBats on a rookie's route. No one is coming. The Clave won't even check on you until tomorrow."

Rage flooded through Janx. He'd kill her. Kill her now!

His right arm lashed out, razor-nails cutting the dim air. Warmth bathed his stomach. She was too far away.

Stupid. Should've waited for her to get closer. Now she won't. Should've waited. Janx's head spun. And he thickly coughed. No way. This can't be happening.

This is all wrong.

Janx thought of Baxter, dark foam flooding out of the kid's nose. Asshole. Stupid little asshole — this is *your* fault. It's all wrong because of you. Even her voice is wrong.

That stopped him for a moment. Because it was true. Janx's vision slowly wavered. The revenant's voice was wrong. It took a moment, but Janx got it. Baring his teeth, he triumphantly pointed a bloody finger at the woman:

"You — you said my husband," Janx croaked. She was crying, so Janx knew he had gotten her. "Revenants don't have husbands — or anybody. And I know you're a revenant, I can smell the virus in you. You can't trick me, O. See?" Janx coughed. "You can't trick me. I'm the best."

The woman stared down at him, her face desolate.

"I'm not O," she said.

Janx was dying. He could see it happening, in glowing text, even when he closed his eyes. The implant messages flashed slowly ... from blue to red. Blue to red.

Mayhe he shouldn't heieve them, though. That's what he was thinking. He didn't hurt now. And he was the absolute *best* in the Clave. No way could he be dying. The more likely prospect was that O had somehow found a way to tamper with the implant messages — just as he'd found a way to bring down the COM system.

Yes.

Janx grinned.

O-as-a-woman stared down at him, her eyes empty. "I know what

you did to Baxter. The drug that you gave him. They took the Net down for me so that I could ... could kill you." She took a shaky breath. "Kill the monster that'd done that to my husband."

"Liar," Janx murmured, smiling. Tricky, tricky ... but he had some tricks of his own left, too. She was gonna see. Soon.

"You PIG!" she hissed. "You — you're not even *human*. You're just a creature that Tower had made — just like the joseys."

Janx kept grinning, even as his eyes rolled back into their sockets for a moment.

"Between the two of them, Tower and Dr. O have *ravaged* this land —"

"You're O," Janx coughed, "Can't trick —"

The revenant leaned closer (not close enough for the nails, though). "The virus mutated, you hastard! It carries a new intelligence, now. A *humane* one. A personality that *shares*. Together, we're going to finish *all* of you: O, Tower, State Force. The *people* will govern." Her voice quavered, "We ... we are Legion."

"Yeah," Janx gurgled. "And you think I'm gonna believe that this new virus-personality," Janx took a shallow, wet breath, "would jeopardize all that, just so you could avenge your hus-husband's death?" He thickly chuckled. "Right."

Within his wavering vision, red data finally scrolled. Perfect timing; he'd managed to access the routine at last:

SYSTEM POWERCELL FLASH-CODE: ACCEPTED.

— System Interrupt::

[WARNING this is a Terminal Event Code. Acknowledge intent ...]

Janx acknowledged, chuckling at his System Implant's stridently realistic warnings. It took a few tries, but he got it right. Tricky bastards.

FLASH-CODE IN: 30 SEC.

"We're not going to live like animals under you anymore," the revenant said, her voice choked. "Tower, O, and all the things they made — like you, are going down."

None of them have ever really had a chance against me, Janx calmly thought, ignoring the revenant's lying words. I'm the best. He laughed, a moist, gurgling sound. "We—we're going to get *all* of you, O." Janx turned his face to the side to let the blood out. "You can run ... but you can't —"

He couldn't see her anymore. Janx sniffed wetly, deeply. "O?" he croaked. For a moment, he worried about the logic of what he was doing.

FLASH-CODE IN: 11 SEC.

Outside, in the purple gloom, the revenant released the dangling slide-cable and limped away from the shadows at the base of the tattered hair. A fitful wind tossed the matted strands of her golden hair. She took a deep breath, tears running from her eyes.

On the top floor, Janx coughed black. "I'm the best," he said to the darkness. He'd forgotten what he had been worried about a moment ago. "I know you're there, O. You tricky hastard ..."

FLASH-CODE IN: 4 SEC.

3 SEC.

Janx grinned.

Outside, not pausing, not looking back, the revenant limped on. A surge of sympathy and comfort arose from the Legion-mind within her. She tried to think of her child, but could not. Her heart was bleak. Turning at last, she stared at the tall black building. She thought of Tower, O — all of the people who could so blindly create a tool like the thing inside there, the thing that had laughed as it had killed her husband.

"Go to hell," she whispered.

FLASH-CODE.

The top floor of the building thumped and blossomed pure perfect white.





D.E.H. '00

The Last Crow

by Bronwyn Elko

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"You ready?" asked Bob, leaning his shoulder on the cabin door. "Them Orys don't like being kept waiting."

"In a minute," said Marta, sizing up his lopsided face. She couldn't figure out how her beautiful sister could have had a son with a face like a beat-up tin can. "Got to feed Blue first."

The old Siberian Husky looked up into Marta's eyes and then tracked her withered hands as she shuffled pots across the nickel-plated wood stove. "You might as well have the last bit of moose," she said, lowering the cast iron stewpot onto the floor. After Blue licked the sides dry, Marta placed the pot back onto the hottest part of the stove.

"What you doing now?" asked Bob.

"What does it look like?" Cleaning up. She waited until she smelled burnt stew and then splashed tablespoons of cold water into the fuming pot. Steam rose, boiling away the crusty scum. Pouring more water into the pot, she scrubbed thoroughly, then rinsed and dried it with a red cotton towel. "Here," she said, handing Bob a bottle of corn oil, "make yourself useful and oil this down and hang it up." She pointed to one of many hooks strung along the ridgepole where Henry had carved the names and birthdays of their eleven children. She didn't want Bob to see how her hip trembled when she tried to reach the higher hooks.

"Aunt Marta —"

"Bob Charlie," she said, cutting him off with a stern look.

She turned back to the other pots on the stove until each one was clean and hung. Satisfied with the kitchen area, she fired the kindling box and swept the wood plank floor while Bob grudgingly hauled in fresh buckets of water from the creek. "The Orys —" he said.

"I suppose you go gee and haw when they tell you, too." She could easily picture Bob's balloon-chested strength in dog harness pulling sled. "Just 'cause them aliens have changed things don't mean I'm going to town leaving a mess."

"Their name's Orys —"

"They from outer space, ain't they?" He nodded. "Well, then," she said, pursing her lips so Bob would know not to bother arguing. It was bad enough that Crow, her family's totem animal, had disappeared and no one had bothered to drive out from town to tell her what had happened. She had called Crow over and over, getting no answer, thinking the end of the world had come for sure. Without Crow to give her news of the land she'd felt lost and abandoned. How was she to know that the aliens had put just about every critter they could lay their hands on, or whatever they called them wormy digits, into hibernation? Somebody should have told her. The whole thing was crazy and made the corns on her feet so hot she could have hopped all the way to China. No, she wasn't about to hurry things on account of the aliens.

She watched Bob leaning against the door jamb, chipping the wood with his buck knife, sucking his beard tails and checking his watch. That boy always was too fidgety to dash off to something new. Always wanting the latest Skidoo or some gizmo he'd seen on TV. Just 'cause he moved on to the Indian village, he expects everything to come easy. Only reason he got off welfare and got a job was to buy that fancy truck of his. Let him wait. She walked over to the bed and sat down to braid her long gray hair in front of the chipped mirror Henry had salvaged from the dump shortly before he died. They loved going to the dump and used to laugh at how people threw out perfectly good stuff.

After tying off her braids with green embroidery thread and colored beads, she grabbed a paisley scarf off the bedpost, called Blue over, and tied it around his throat. Grabbing her knitting bag, she stood up to straighten her daffodil print dress and don her hat. She pulled up her long socks before she suddenly remembered she didn't have to worry about mosquitoes biting her thin ankles anymore. "You ready, Blue?" she asked, rubbing her hands over his arthritic paw,

thinking how similar they were in their old age. He panted against her leg and slowly wobbled to his feet. Marta slowly followed Bob onto the porch and down the rickety steps as he carried her small battered suitcase out to the brand new Ford pickup and threw it in the back. She looked around her yard. Wild grasses, plump with seed, swayed in the evening wind. She lifted the brim of her old safari hat to gaze at the orange sun being squeezed between the knuckle-topped mountains surrounding her cabin. Bear Creek bobbed silently beside the narrow dirt road leading to the pot-holed Klondike Highway and town. Inside a rectangle of picket fence next to the wood shed, the midnight sunset scrubbed the purple fireweed she'd placed on Henry's grave with gold. "Wait," she said, ignoring the pain in her hip as she shuffled over to the tilted wooden cross at the head of Henry's grave. Unclasping her necklace, she carefully looped the beaded medallion of Crow around the arms of the cross. Then she walked back to the truck and opened the passenger's door. "Get in, Blue."

Marta rolled her window down so she and Blue could stick their heads out as they drove into town. She liked the sound of the wind rushing by, the pine-oil smell of juniper growing in the ditches, and the crunch of gravel under their wheels. Foxtails swept their iridescent brooms at them as they sped by, reminding her of when she and Henry used to drive along this road looking for raspberries. During the short dusky nights of summer, the older children would ride in the back of their rusted-out Dodge pickup, chittering and squirming like otters, while Henry steered one handed and smoked his pipe and Marta played finger games with Zeke and little Lucy. And when Henry took the truck with him to go sluicing for gold up False Creek, Marta and the kids sometimes walked the three miles to town, trying to get enough beer bottles so they could buy ice cream. As she listened to the wind rush over the road now, it seemed deserted and silent without the constant drone of mosquitoes.

Marta drew her head inside the cab and turned to Bob. "What did they do with the bugs?"

"Same as everything else. They're sleeping in them big barns the Orys built. We tried telling them that we didn't care if mosquitoes ever came back, but they were real stubborn about insisting that everything got preserved."

Don't matter, she stewed silently. Without Crow around who's gonna preserve the land's memories of the changes? She stuck her head back out the window as they pulled onto the main street of the darkened town. It was strange seeing all of Dawson City's brightly colored Victorian buildings, decked out in ribbons and banners for the tourist season, so dull and lifeless. Marta looked up at the sliver of new moon scything the bell tower of the fire station, wondering if the absent tourists were also looking at the moon from their new home on the way station. Did the moon change faces from up there, or did it always look the same?

Bob pulled the truck up to the Occidental Hotel, got out, grabbed their suitcases, and then helped her step down from the cab. He patted the hood of the truck. "Well, girl, you been a real queen of the highway." He sighed, turning to Marta. "Jack said he'd wait for us in the bar. The others have gone ahead."

"Lucy, too?"

"Lucy went up yesterday, but she said she'd stake you quarters close to Yukon Park."

"We were supposed to go together."

"Belinda was sniffing and coughing, so Lucy thought it was best to go before she came down with a full cold. You know what a worrier she is. She even made Joe fly back from the way station to help her with Lucy."

Lights from the tavern cast thin bars over the oriental rug and heavy turn-of-the-century furniture strewn throughout the hotel's dimly lit lobby. Marta could see Jack leaning against the cash register, his head

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cranked back watching the television bolted to the wall behind the bar. Bob shambled into the tavern with Marta and Blue tagging behind.

"Hey, Jack!"

"About time! Ships are leaving in another hour." Jack winked at Marta while pouring Bushmill's into three tall glasses. "Let's toast to early retirement and no more sixty below," he said, handing them both drinks as they pulled stools up to the bar and sat down.

"Here's to the Orys," said Bob, gulping his quickly. "And their fancy new highway."

"Aren't you drinking, Marta?" asked Jack.

"Don't see what's to drink to. Aliens putting some kinda germ in the air that's gonna change everything. It ain't right."

"It's just temporary," said Bob. "Until the Orys finish building the new highways. Two years oughta do it, tops. Ain't that right, Jack?"

"I like the old highways."

"The new ones will be better. Like a global subway," said Jack. "Your grandchildren will be able to pay a token and Zowie! Beaches in Hawaii, just like that." He snapped his fingers. "And no more gasoline."

"What about your truck?" she asked, pointing in the general direction of Bob's truck outside.

"I'm gonna miss it, but like Jack says, gasoline's gotta go. And just think of all the places we'll be able to visit."

"If this thing's so safe, how come we gotta leave?"

"It's a germ, Marta. It'll invade anything that breathes." Jack patted her on the knee. "It might not actually kill you but—if you watched the news you'd know what this nano-germ is going to do. You want to end up being part of the highway?"

"Stop being so damn stubborn," said Bob. "The Orys been doin' good stuff ever since they landed. Remember how they showed us a cure for cancer?"

Marta pressed her lips and picked up her knitting. "I hear Tommy Benjamin ain't goin'. He's stayin' put at Southfork. Heard about other folks stayin' too."

"Tommy's crazy," said Bob, "ranting on and on about how the Orys are just like the white man, tryin' to get our land."

"Maybe he's right. Besides, how we suppose to trust the land again if we don't know what they done to it?"

"They explained all that on the news!" Bob said.

"Only news I care about is Crow's."

Jack sighed. "I know it's hard, but unfortunately we don't have a choice anymore. People are dying in the big cities. I mean that's why I decided to retire here in the first place, to get away from the smog." He paused. "Funny, isn't it? Now I'm leaving a place with the cleanest air on earth because of the smog in Chicago and Los Angeles! I don't like it either, but it's what most everyone agreed on."

"I didn't," said Marta, pushing her drink away. She counted the number of stitches on her needles. "No one asked me."

"It won't be so bad," said Bob, sucking whiskey off his mustache. "When Tom came back yesterday, he said Yukon Park is the nicest thing in the whole way station. Big as a city, and the aliens did a bang-up job on the mountains and lakes. Looks just like the real thing."

"How a tin can floating in space can have real mountains is downright stupid. A mountain without roots? Without Crow or Bear?" said Marta, holding her knitting up close to her face. Let them say what they wanted, she'd made up her mind. The real Yukon would never fit in a Dark, no matter how smart the aliens were.

Jack finished washing up the dirty glasses, tidying the tables and chairs while Marta knitted and Bob checked all the upstairs windows to make sure they were locked.

"A-OK," said Bob, looking at his watch and switching off the TV. "We'd best get over to town hall. You ready, Jack?"

"Funny how you always think you're forgetting something," Jack said. "I always got to do my 'idiot check' before I leave on holiday, else I can't get to sleep. Why don't you go on ahead, and Marta and me will be along shortly."

"O.K., but don't be late. Once they're loaded, them ships move quick. You want me to take Blue for you?" asked Bob, turning to Marta.

"He won't go without me. You go on." She dropped her knitting

and watched him clomp toward the door. "Maybe you'll get rid of that awful stomp-up there."

"What?" he asked, turning.

"I said maybe you'll finally learn to pick up them elephant feet of yours and move like a man."

"Sometimes you really piss me off." He sounded more hurt than mad.

"That's what loving aunts do best," she said, and waved him out the door, smiling to herself when she heard him mumbling about her being a crazy old lady.

Jack hummed while he checked the safe and locked the cash register. He came out from behind the wide, copper-topped bar, running his hands along the oak rail until he reached the spot where his suitcase sat on the floor.

"Better go, Marta," he said, helping her down from the stool. She wrapped her knitting into a ball, called Blue, and let Jack take her arm to steady her as they walked out the door and onto the empty streets. A sweet northerly wind blew scraps of red ribbon around her ankles, a tundra wind from above the arctic plains, the kind her native forefathers used to say brought sudden good luck to the caribou hunt. The wind would sing the changes in the herd, and Crow, her totem, would interpret the song, telling the hunters which trail to follow. As she listened to it sing now, she knew that her Crow was gone and would never come back. The crow they released in the future could never be her totem, would never be her Crow. It would arrive blind, having missed the changes. The land would be alien to Crow, and to all the Crow clan, and to all their children's children. The bond between the land and the Crow clan would be broken.

By the time they neared town hall and she saw the long alien ship, she'd already made up her mind. She told Bob.

"I can't let you do it. Lucy would never forgive me," said Bob.

"Lucy's a grown, married woman. She doesn't need her mother telling her what to do. And I don't need you telling me."

"You don't know what will happen if you stay. Once the germ is released Terra's no—"

"And you don't know what'll happen once you go. Either way, me and Blue are gonna stay."

"I can't let you do it. I'm responsible."

"Responsible for me?" she asked. They both laughed. She gave him her most stern look when he tried to stare her down. He chuckled again, and then frowned. "I don't suppose I can reason with you?" He paused. "Course, we could make you go."

"Why? So you can feel you tried everything? You know better than that." He gently scuffed his feet for several minutes before looking into her eyes. "What will I tell Bob and Lucy?"

"That the germ's gonna cure this damn hip of mine."

Blue hobbled beside her as they slowly passed by dilapidated shacks on the fringe of town and set out on the road under the stars. Her tiny suitcase lightly bumped on her thigh. It was eerie walking the highway in such utter quiet, with only her footsteps and Blue's panting rippling the silent cape of night. She tried to imagine what would happen when the germ started building the highways, changing things. She sighed. It was better to let it be.

A flash crossed the horizon and she looked up, puzzled. "June's too early for northern lights," she said to Blue as she set her suitcase down. Then another light burst, and another, filling the sky with dazzling sheets of green and pink. Soft winds lifted up, pulled down. Sifted down, washing over her. "Who would have thought aliens could pick such pretty colors?"

She took a deep breath of air and felt the ache in her hip become feather light. Turning to look in the direction where she'd last seen Crow, she picked up her suitcase and headed home under the new sky.



Editorial from page 3

tributors and two of them picked it actually up. Armed with this success, we quickly started work on our second issue. About half way through the process, problems started to arise. The three of us sat down and discussed what we were trying to do. Kevin and Tim told me that while they were enjoying the experience they weren't really looking for careers in the publishing field. My work with distributors and promotions was making the magazine larger than they were comfortable with. In the end, I agreed to purchase their shares of the magazine from them and we went our separate ways.

At a convention in Lynchburg Virginia I interviewed Roger Zelazny and met Angela Kessler. Angela and I discussed my vague plans to start a second magazine *Dreams of Decadence*. After the convention I kept in touch with both Roger and Angela. About four months later Roger and I reached an agreement for DNA Publications to publish his poetry book *A Hymn to the Sun*. Nine months later Angela and I began a long distance relationship.

One day when I walked into a store and found *Harsh Mistress* next to *Hustler* I knew that I needed to change the name of the magazine. At about that time Stephen Pagel, Kevin Murphy, and Brian Murphy and I entered into a partnership that brought DNA publications some much needed capital. Kevin took over the art direction and Stephen joined forces with me in the promotional end of things. The stakes were increasing. I contacted Ingram Distribution to see if they'd be interested in handling *Harsh Mistress* which would be changing its name to *Absolute Magnitude* with its third issue. I'd been happy with Fine Print, but I wanted to reach more stores. Ingram could do this for us, but only if we gave them the lucrative chain store sales. So I made the deal and effectively doubled our distribution.

Next we concentrated on increasing our subscriptions. In an effort to keep costs down DNA Publications joined forces with Ed McFadden the publisher of *Pirate Writings* for a direct mail campaign. We mailed to *Weird Tales* Subscription list and received a five percent response. Our subscription list grew, cash flow evened out, and it became much easier to publish the magazine with subscription renewals coming in.

We were approached by a wholesaler who told us he liked our magazines and would like to help us get them out to a wider audi-

ence. He was persuasive and we decided to sign with him as did Ed McFadden. We soon were sending close to ten thousand copies of *Absolute Magnitude* to more than twenty distributors. There was no way that we could have known, but we'd managed to sign on with a wholesaler just in time to get a ringside seat to the collapse of the entire independent distribution system. Both *Absolute Magnitude* and *Pirate Writings* had delivered three issues to the wholesaler when the collapse happened. It wasn't our wholesalers fault, but we were never paid for most of the magazines that we delivered. We were, however, stuck with the bill for close to 30,000 magazines. As it turned out, Ed and I were the lucky ones. A large number of small press magazines had signed on with our wholesaler, but none of them had the subscription numbers that we had. Most of them had needed to see a cash return on the magazines just to continue publishing.

By this time Angela had moved from Virginia to Massachusetts and was now living with me. This turned out to be a godsend. Angela's computer skills were immense and she made a quick study of the publishing field and had become a damned good first reader for *Absolute Magnitude*. Eventually it was Angela who started the magazine that we'd been discussing for so long: *Dreams of Decadence*. We printed fifty copies of the first issue at Staples for \$50.00 and sold all of them at Dragoncon. We used the money to get two hundred and fifty more copies printed and we sold all of those as well. When all was said and done the first issue had sold more than 2000 copies. With the second issue we had the cover professionally printed, but we still had the guts photocopied. It duplicated the success of the first issue and we knew we had a viable magazine on our hands.

Then Hot Topic, a chain store that specialized in selling goth clothing and accouterments to a teenage audience ordered 250 copies each of our first two issues. Those copies sold well enough that Hot Topic

asked for 300 copies of the third issue. We took the third issue to the printer that printed *Absolute Magnitude*. Their minimum print run was 3,000 copies and we were a bit nervous about the size of the print run, but we needn't have been. The 300 copies in Hot Topic sold out in five days. They ordered 1,500 more and sold all of those as well.

The interesting thing about this is that at the time horror had reached its lowest point. Every major publishing house had closed its horror line. *Weird Tales* had lost the rights to the *Weird Tales* name and was struggling on under the name of *Worlds of Fantasy and Horror*, and *Cemetery Dance* hadn't been seen in some time due to the publisher's health problems. Surprisingly *Dreams* wasn't embraced by the horror field. Many of the insiders that were still trying to survive in the new harsh reality of a once glutinous market were enraged by the success of *Dreams*. Some reviewers even complained that it wasn't fair that *Dreams* should have such strong distribution—we hadn't paid our dues. Apparently all the dues that we'd paid with *Harsh Mistress* and *Absolute Magnitude* didn't mean a thing to them.

Another change was in the works for the company. Stephen and Kevin wanted the company to focus more on book publishing and I wanted to continue concentrating on magazines. In the end, we agreed to reorganize the company. I ended up in control of the magazines and Stephen, Kevin, and Brian ended up in control of the books we'd purchased for DNA Books. Their book line eventually became known as Meisha Merlin.

Once the reorganization was complete DNA publications purchased *Worlds of Fantasy and Horror* from Terminus Publications.



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The next day I called *Weird Tales* Limited to see if I could get the rights to the *Weird Tales* name. It took me about five minutes to reach an agreement with them and DNA publications was now the publisher of *Weird Tales*.

As fate would have it, our first issue was the seventy-fifth anniversary issue. We contacted IPD, who distributed *Weird Tales*, and asked to discuss terms with them. They were delighted that we'd gotten the *Weird Tales* name back, and offered us a very good contract—much better than what we had with Ingram. We allowed Ingram to continue handling their independent stores, but transferred all of the chain store distribution to IPD. While we'd taken it on the chin with the wholesaler, this would be the second time we'd get lucky with our chain store distribution. When we'd made the move from Fine Print to Ingram, we had gotten out just before Fine Print went bankrupt. By moving from Ingram to IPD when we did, we managed to be largely unaffected by the chaos that arose when Barnes & Noble tried unsuccessfully to purchase Ingram.

Shortly after, DNA Publications purchased *Pirate Writings* (which later became *Fantastic Stories*) from Ed McFadden and reached a three year management deal with Charles Ryan to publish *Aboriginal SF*. We were now publishing five magazines.

Angela and I got married and relocated to the heart of the Blue Ridge Mountains in Virginia. This was another boon for DNA as it cut our overhead by about seventy percent. And then in May of 2000 we purchased *Science Fiction Chronicle* from Andrew Porter. It quickly became immediately obvious to us that a monthly news magazine was a lot more work than five fiction magazines combined. Angela and I had to radically change our work habits and I was suddenly working a lot of extra hours. The plan was to finish out the year as a bimonthly and then back to a monthly schedule with the December issue. We continued to streamline the process of putting out *Chronicle*. The immediate feedback was quite good. Subscriptions began to roll in and we settled into a new routine.

Because of the extra workload we were unable to renew our management contract with *Aboriginal* when it expired. In the end Charlie Ryan decided to close down the magazine. Looking back on it, I wish that that could have played out another way.

Over the next six months it became clear to me that our printer was becoming overwhelmed with the demanding schedule of

printing a monthly news magazine. I took to delivering the magazine almost a month early to make sure it would be out on time. It was then that I got a call from a small sheet-fed printer in Colorado that specialized in glossy magazines. I was amused when he started his pitch by explaining to me why I didn't have to use a local printer. In seven years of publishing I'd only used a local printer once, with our very first issue. After that we'd been printed in Mississippi and North Dakota. Still, the price he offered me was very attractive. It worked out to only \$400.00 more than I'd been paying and now I'd have a glossy magazine with eight pages of color. Their samples were great and I made the move. We sent off the first issue. Everything seemed to be going fine, the proofs looked great, I should have known better. The day that I approved the profs, my account rep called me and told me he'd made a terrible mistake. He'd somehow left out two signatures in the estimating process. This issue of *Chronicle* was going to cost me an additional \$1,000.00. He was really sorry, and he'd completely understand it if I pulled the job. Of course I wasn't in a position to pull the job; *Chronicle* is not a fiction magazine, it must be timely to be of any value. So I told him to go to press and I began looking for a new printer. You can burn me once on a bait and switch, but you'll never get a chance to do that to me again.

I found a website on the net that allowed me to post my job info and get quotes from dozens of printers. In the end, I got a quote from a large printer that just blew me away. I asked for samples, and when the samples, I called the publisher of each magazine that they had used for samples. The prices were for real. The price of our next issue didn't change at press time.

Things couldn't have been better. The economy had been booming for a long time. Subscription and newsstand sales were all solid and advertising was adequate. Then the 2000 presidential election happened and the country was thrown into uncertainty as to who had won the election. We could see that uncertainty reflected in sales. But it was only a blip, it concerned me but not overly so. And then September 11th happened. Virtually all of our advertisers were shut down because of their proximity to the World Trade Center. As a result we didn't get paid for any advertisements for more than three months, but what could anyone do? It wasn't as if the book companies had decided to pay us late, they weren't being allowed back into their buildings. Sub-

scription renewals stopped altogether for almost four months. And who could blame the subscribers, renewing subscriptions to magazines didn't seem very important anymore. Every magazine publisher that I've spoken with had the same experience that we had. Many magazines weren't able to make it through, but all of the top genre magazines did manage to survive this tragedy.

With the lingering effects of the September 11th attacks and a failing economy, DNA Publications decided to diversify. We formed an arrangement with Wildside books and are slowly beginning to publish more and more books. We also made a decision to start a magazine outside of genre publishing. Our research lead us to the pet industry, which is currently a sixty billion dollar industry and growing. We had narrowed down our choices to either a cat magazine or a birding magazine when Angela received a letter in the mail from her favorite cat magazine, *The Whole Cat Journal*. The letter explained that they would be discontinuing the magazine. Because of our research into mailing lists we knew how many subscribers the magazine had. Angela told me that no one else covered holistic health concerns for cats. If we started a new magazine that covered the same material and rented *The Whole Cat Journal*'s subscription list we would get a great response. I told her that that all sounded good, but perhaps we should just see if we could buy the magazine. I called the publisher, they were interested in selling the magazine and provided me with the info I needed to decide if I should buy it. *The Whole Cat Journal* was a twenty-four page black and white newsletter with no newsstand sales and no advertising. We decided to buy the magazine. It took about two weeks to work the deal. Then we owned a cat magazine. Four issues later, *The Whole Cat Journal*, now a full color glossy magazine, attracts lots of advertising and is selling far better than we had hoped on the newsstand.

Ten years ago I could never have guessed where DNA Publications would be today. I don't know where we'll be ten years from now, but I can only assume that time and fate will intervene and take us to places that we have yet to imagine.



What if? #36: Alone

by Robert A. Metzger

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We are alone in this galaxy.

There does not, nor has there ever been a single race of beings that have traveled to the stars. And I can prove it. Those are mighty strong words that probably don't sit well with you, and certainly didn't sit well with me when I came to this conclusion. But I think that's the way it is.

Pick up any piece of science fiction, something written within the last few years, and there is a better than even chance before you're more than a few pages in you have either run into aliens, or some nanotechnology. What makes those two concepts work so well in a fictional setting, allowing the reader to so easily fall into that science fiction world, is that most of us believe that aliens and nanotechnology are real.

So very real.

Of course, few of us believe that frozen aliens are being stored in the stockroom of a truck-stop coffee-joint just outside of Roswell New Mexico, or that Dr. Massive Intellect of the Institute of New and Gee Whiz Things has just developed a beakerful of nanobots that can extract individual carbon atoms from out of rotting milk cartons and use those atoms in the fabrication of androids that are perfect copies of the missing folk plastered across the back of said milk cartons. No - we don't believe that.

But we do believe that aliens are out there somewhere. How can they not be out there? There are simply too many stars, too many possibilities, too many chances for intelligent life to have not sprung up in other locations. And if those aliens exist, then so too must nanotechnology. How could it not? Aren't we just on the cusp of being able to manipulate individual atoms, certainly no more than one or two generations away from that beakerful of nano-induced miracles. And if we are that close, then there certainly must be some alien civilizations out there that have beaten atoms into submission.

It is so logical.

How could any rational person not believe it?

Well, the same rational person that believes in those possibilities, still must ask why there's been no recorded sightings of these interstel-

lar traveling, atom manipulating aliens - and I mean real evidence, like a flying saucer landing in DC, or a contingent of little green guys vacationing at Disney World.

That is a reasonable question.

And any well educated person, especially those savvy in the ways of science and technology (I'm talking about you), know that because the galaxy is such a large place, and that the distances between the stars are incredibly great, when coupled with the fact that nothing can travel faster than the speed of light, means that these aliens simply haven't been able to reach us. The galaxy is simply too large.

We know that.

That's the party line.

Only one problem with that - the party line is wrong.

The galaxy is really not a big place at all, not with respect to space traveling aliens. Before proving that to you, it's helpful to consider some of the nitty-gritty facts of our galaxy, the Milky Way. The image that works for me when thinking about the Milky Way is that of a pizza, one that has way too many toppings stacked in the center. Overall dimensions of this galactic pizza give it a

diameter of about 100,000 light years, with a thickness of about 500 light years at the edge, and around 10,000 light years at the overstuffed central bulge. The toppings in this galactic pizza consist of 100 billion stars, in which the average age of those stars is around 5 billion years.

Big numbers - surely there must be at least a single interstellar traveling alien race out there. When you think about how big it is, and just how many stars are out there, it's easy to believe that there must be hundreds, thousands, perhaps even millions of them.

But for arguments sake, let's assume that there is just one - after all, that is all we need - just one and we will not be alone. Any more than that is just a bonus. And let's also assume that this alien race reached the ability for star traveling sometime between the birth of the galaxy and 12 million years ago.

Give me those 12 million years to play with (you'll see why later). 12 million years is not a very big deal, not when you consider that the galaxy is on the order of 10 billion years old. This means that our hypothetical space-traveling aliens figured out how to get to the stars during the first 99.9% of the history of the galaxy. Surely you can allow me to hold on to that last 0.1%. After all, if they didn't show up during that first 99.9%, the odds are pretty thin that they're going to miraculously appear in the last 0.1%.

We'll make a further assumption that these aliens are capable of building spacecraft that speed along at 1% the speed of light - making these interstellar ships clock at a velocity of 3 million meters per second, which is equal to about 6.7 million miles per hour. That is mighty fast, but not *impossibly* fast. We have launched spacecraft that have traveled at speeds of about 1% that velocity. Is it so difficult to believe that in a century or two we



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might push that speed limit up by a factor of 100.

I don't think so.

Remember that the time between the Wright Brothers first flight and man landing on the moon was a bit over 60 years. It is not that big a stretch to imagine that we could increase spacecraft speeds by a factor of 100 in the coming generations based on what we've done in the past. In the scheme of things a velocity of 1% of the speed of light is not all that great. The relativistic effects are basically nonexistent, and such velocities should be achievable with nothing much more sophisticated than an interstellar ramjet that sucks up stray hydrogen atoms to power up its fusion reactor and then blow the high velocity byproducts out its back-side to produce thrust. We are just now at the brink of building such reactors. This should be no problem for an alien race that is a century or two in advance of us.

And if these aliens could travel at 1% the speed of light, just how long might it take them to travel from star to star? That depends on what part of the galaxy you are traveling about. In our neighborhood of the galaxy, out where the galactic disk thins, the average distance between stars is about 5 light years (in our case the Centauri star system is about 4.3 light years away). Of course closer in the galactic bulge that distance might drop by a factor of 100. But intense radiation and stellar collisions make it a nasty neighborhood, one not well suited to the long evolutionary times needed for something to rise up out of the muck and eventually build a starship. We'll stick in the outer reaches of the galaxy, where the star-to-star spacing is around 5 light years. So traveling 5 light years, at a speed of 1% of the speed of light, means that it would take 500 years to reach a neighboring star.

Ouch!

We could conjecture that our aliens might be immortals, or able to pack themselves away in stasis so that such long times don't dissuade them such lengthy trip times. But let's not give ourselves that wiggle room. Let's assume that these are flesh and blood creatures like us, with life spans on the order of 100 years, and in possession of no miracle technology available to get around that.

So what to do?

If they want to make the trip, then they've got to do it the old fashion way – build those monster multi-generation starships, and launch off, with the knowledge that they are never going to reach their destination (that happy day will be reserved for their great-great-great-grandchildren).

Years Out	Distance Out (Light Years)	Stars Visited	Number of Ships
600	5	1	2
1,200	10	3	4
1,800	15	7	8
2,400	20	15	16
6,000	50	1,023	1,024
12,000	100	1,048,575	1,048,576

Table A

After 500 years of travel, they reach the neighboring star system, and discover that the place is totally ill-suited to their needs – nothing but a bunch of gas giants, and a couple of little rocky planets so close to the parent star that their surface temperatures are high enough to melt lead. There's nothing there for them. But there are plenty of asteroids, full of heavy metals and carbon-rich compounds, along with a great abundance of iceslush comets.

It's no place to live, but a good place to stock up on supplies.

So what do they do?

They take a generation off from traveling, and use those supplies to build another starship. After completion of the second ship, the crews split, and the two ships head off in different directions.

What do these aliens have at this point?

They spent 600 years to travel 5 light years and now have two spaceships. Assuming that both those ships again end up at stars that don't have a suitable home, at the 1200-year mark they're now 10 light years from home, and have 4 starships heading off in different directions. I think you can see where this is

going. At 1800 years they are 15 light years out, with 8 starships. Eventually we would hope that one of those starships would find a planet suitable for colonization. But do you think everyone would want to live on that new rock? These alien folks have known nothing but starship travel for thousands of years. Some would probably want to stay, but most would probably travel on. Take a look at Table A to see just what this form of travel and starship production gets these aliens.

Something strange happens between the 6,000 and 12,000-year mark – the number of stars visited and the number of ships built begin to reach astronomical levels (please excuse the pun). But something even stranger happens if you consider this a bit more closely. At the end of 12,000 years the aliens have moved out in all directions from their parent world by a distance of about

100 light years. Think of a ball with a diameter of 100 light years. Just how many stars are within that ball?

Not as many as you might think.

The average distance between stars is 5 light years. The volume of a sphere is defined as $V = 1/6 \pi d^3$, where d is the diameter of the sphere. Each star system can be viewed as having a diameter of 5 light years, giving it a volume of 65 cubic light years. The 100 light year diameter region of space that the aliens have explored has a volume of 523,333 cubic light years. Since we know that each

star takes up 65 cubic light years, this means that within that 100 light diameter sphere of space there would be approximately 8,000 stars. That's a lot of stars. But look at the chart. The number of stars visited during this period

of exploration is over 1 million. But there are only 8,000 stars in that volume of space.

What does that mean?

It means that each star is visited more than once – many times more than once. In fact, at the 12,000-year mark each of those 8,000 stars has been visited by 131 different starships – that's a visit to each star at a rate of about



Alone

one visit per century. So if one of those alien starships started a colony in a star system 2,000 years after the initial departure from their home planet, those colonists would have been visited by 100 different starships during the next 10,000 years. And with each one of those visits they would receive the reports and data gathered about the other solar systems that those ships explored.

No bad.

Now let's make a *big* jump.

The galaxy has a diameter of 100,000 light years. Since we know these aliens can travel 5 light years in 600 years, how long will it take that first alien craft to reach the far edge of the galaxy?

12 million years (now you know why I picked the 12 million year mark – this allows enough time for our aliens to travel across the entire galaxy).

That seems like a mighty long time.

But is it really?

Not in the grand scheme of things. 12 million years ago, the dinosaurs had already been dead for 53 million years, and mammals had evolved to the point that a promising group of primates were just starting to split up along different branches of evolution's tree, the gorillas, chimpanzees, orangutans, and proto-humans all starting to go their own way.

Not really that long ago.

Let's examine what happens between the 12,000-year and the 12 million-year mark at which time they've reached the edge of the galaxy. Because of the large size of the numbers we are dealing with, we will now slip into using scientific notation. As an example of scientific notation, the number 1 billion can be expressed as 1,000,000,000 or in scientific notation as 1×10^9 , where the superscript 9 represents the 9 zeros in the figure 1,000,000,000. See what happens in Table B.

$2 \times 10^{6,000}$ is a number beyond comprehension. But let's take a stab at it. There are 100 billion stars in the Milky Way, which can be expressed as 1×10^{11} stars. This means that each star has been visited on average $2 \times 10^{6,000} / 1 \times 10^{11} = 2 \times 10^{2,989}$ times by the time the aliens reach the end of the galaxy.

This number is as close to infinity as one is ever apt to come. The math is right, but the analysis has broken down due to an early assumption that no longer holds true at the 12

million-year mark. Our basic assumption was that each time a ship reaches a star system, that it builds a second starship. The problem is, that well before the 12 million-year mark the entire mass of the galaxy would have been converted into starships. Even if each starship were somehow magically fabricated out of a single atom, these wondrous aliens would still

diameter of 20 kilometers. That's one big sphere, with room for millions of inhabitants. If you assume that it has an average density of 1 gram/cubic centimeter (metals such as iron have a density of around 5 grams per cubic centimeter, so that an overall density of 1 gram per cubic centimeter would be obtained if the craft consisted of 20% metal, and the

rest open spaces – more than generous). Crunching through the numbers, such a starship would weigh in at 4×10^{15} kilograms – that's 4 trillion tonnes. And if we allow for the consumption of a single Earth-sized mass in each solar system in the construction of these ships, how many could be built from the raw resources available in each solar system?

It comes in at a bit over 1×10^9 starships – 1 billion from each solar system.

Since there are 1×10^{11} stars in the galaxy, this means that our aliens could build a total of 1×10^{20} starships before they ran out of available materials. This is certainly far, far less than the $2 \times 10^{6,000}$ ships they could build if there were an infinite amount of material available, but not to worry – 1×10^{20} ships can easily explore the entire galaxy.

In fact, more than easily.

This means that at the 12 million-year mark that for any given star there would be 1×10^9 starships heading towards it (remember there are 1×10^{11} ships but only 1×10^{11} stars). Some may only be a few years from arrival, while others might still be 500 years out, having just left another star system. Therefore, if you have 1×10^9 ships arriving over a 500-year period you can easily figure out how often a ship will be arriving. Take a look at Table C.

That's four ships a minute. That means that for every minute, of every hour, of every day, of every year, starships are arriving in the any given solar system at a rate of 4 every minute.

Think about what this says.

If any alien race achieved the ability of low speed star travel longer ago than 12 million years (requiring only 1% the speed of light velocity), and built a second starship at each new solar system they arrived at (stopping the building process once an Earth-equivalent mass had been used), then we should be seeing an alien ship pulling into our solar system every 15 seconds.

Years Out	Distance Out (Light Years)	Stars Visited	Number of Ships
12,000	100	1×10^6	1×10^6
120,000	1000	2×10^{60}	2×10^{60}
1,200,000	10,000	2×10^{600}	2×10^{600}
12,000,000	100,000	$2 \times 10^{6,000}$	$2 \times 10^{6,000}$

Table B

have run out of matter in the galaxy well before they could build so many ships.

So we need to take a step back.

Just how many ships could be built under the condition that the rate limiting operation is not the ability to build ships, but in finding the material to build them. Let's make an assumption that on average every solar system has enough asteroids, comets, dead and barren planets and moons to make available a pile of material with the equivalent mass of our Earth. That is probably a safe assumption. Our own solar system has more than that amount of useless rocks that could be used in the production of starships – aliens could use both Mercury and Venus (every last bit of them), and it wouldn't impact the life forms

Length of Time	Number of Ships Arriving During that Time
100 years	200 million
1 year	2 million
1 day	5,479
1 minute	4

Table C

on Earth in the slightest.

How much does Earth weigh?

It comes in at 6×10^{24} kilograms.

And how much mass do we need in the building of a starship. Again we will need to make some assumptions. Let's say that our star ships are shaped like a sphere, with a di-

Absolute Magnitude

And this is a worst-case scenario.

We could easily imagine them traveling at 10% the speed of light, or perhaps building 2 starships at every star they encounter, or allowing them to consume more than a single Earth mass of material in a given star system.

But we've been even more stringent in our assumptions than you might imagine. We've operated under the assumption that a group of these aliens would be willing to leave their home world, and to venture off knowing that they would be long dead before they ever reached the first star system.

Perhaps this is asking too much.

Perhaps they'd only be willing to send out *unmanned* starships. From our science fiction reading, we are comfortable with the type of nanotechnology where a beakerful of nanobots is able to manipulate individual atoms in order to build any macroscopic object they desire, whether this is a toaster oven or a starship. But even more important than the things they build is that they can build a duplicate of themselves. And that's just what we need – the ability of a starship to build another version of itself. This need shares one of the characteristics of nanotechnology, but is actually far easier than nanotechnology. Individual atoms don't have to be manipulated, all that is needed is a technology that can build a starship with the raw resources found in a solar system.

Not really hard to imagine is it.

Computer driven drones could be used to gather material, bring it back to a factory in the starship, where the raw resources would then be converted into building materials through conventional manufacturing process, and those materials in turn used to fabricate a starship. We are not all that far from being able to do this right now (not in the building

of starships, but in the basic manufacturing of goods such as toasters). You don't need to play with individual atoms, simply set up a starship fabrication sequence that starts with raw ore on one end, and pops out a new ship on the other. This is infinitely easier than nanotechnology.

Let's not even call it a form of nanotechnology – let's simply call it self-replicating technology.

Such a ship would be much less complex than a ship carrying aliens. There'd be no need of life support, no need to build the facilities, the homes, the infrastructure needed to keep aliens alive and happy. All you need is a starship that can self-replicate it-

self, gather data, and when it encounters other starships pass that data along to them.

And why pass that data along?

Because eventually those ships will return to the alien's home world. At the 12 million year mark we saw that alien ships would be arriving at Earth at a rate of 4 every minute. But this arrival rate is taking place at each and every star in the galaxy, including the home star of the aliens that launched the first self-replication starship.

These aliens can explore the entire galaxy without every stepping foot off their planet. And these self-replicating ships, since they do not require all that life-support overhead could be much smaller and faster, than the alien compatible ships. Assume that rather than having a 20-kilometer diameter, that these ships would only need a 2-kilometer diameter. There would then be the resources available in the galaxy to build 100 times more of these non-alien occupied spacecraft. And assume that they could travel at faster speeds, up to 10% the speed of light (since they have 100 times less mass to move about).

What would that give you?

The entire galaxy would be explored in 1.2

million years, and each and every star system would find itself being visited by 7 new starships every second. Within just a few hundred years the human race should have this capability, and a mere 1.2 million years after our first launch, the entire galaxy would have been explored, with 100 billion reports back to our world from each and every star system in the galaxy.

Are 4 manned starships visiting Earth each minute?

Are 7 self-replicating starships visiting Earth each second?

The answer is obviously no.

And this unbelievable rate of visits requires only a *single* space-faring race to have sprung up in the galaxy sometime from its inception, to 12 million years ago (and only 1.2 million years ago if we use the assumptions in the fabrication of self-replicating starships not carrying aliens).

It is often conjectured that perhaps the Earth has been visited in the past by alien races, but that we were at too primitive a level to recognize what was occurring, to realize that we were being visited. Perhaps. But the numbers clearly show that the last visit should not have occurred 1,000, 10,000 or 1 million years ago. In the last century we should have been visited hundreds of millions of times.

Where are they?

I think you can arrive at only two conclusions. The first is that from the birth of the galaxy, until very recent history (12 to 1.2 million years ago, depending on the method of exploration), there has not been a single alien species in this galaxy that has risen to a level much greater than ours. The second conclusion is that a single species, or perhaps many intelligent species, have evolved to levels greater than ours, but not a single one of them thought that exploring the galaxy was worth the effort.

That's it. The numbers don't lie.

We are either totally alone, or share this galaxy with other intelligent species that simply do not wish to explore the physical world around them. What other conclusions can you arrive at?

